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THE UNIVERSITY OF ALBERTA  
RECREATIONAL ENTERPRISES FOR FARMERS IN ALBERTA: THE  
DISTRIBUTION OF EXISTING FACILITIES  
AND FARMERS' ATTITUDES

by



DAVID HENRY KLIPPENSTEIN

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH  
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THE UNIVERSITY OF ALBERTA  
FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "Recreational Enterprises for Farmers in Alberta: The Distribution of Existing Facilities and Farmers' Attitudes" submitted by David Henry Klippenstein in partial fulfilment of the requirements for the degree of Master of Arts.



## ABSTRACT

Information obtained from operators of eleven out of a possible fourteen guest farms and guest ranches in the province of Alberta shows that the provision of recreation and accommodation facilities can provide an important source of income for farmers. A description of the general characteristics of these enterprises is given. Nine enterprises are part of farms and ranches which are still in agricultural production. Most enterprises are modest in scale; providing accommodation for less than twenty guests. Enterprises which have been established for a longer time are located in the southwestern part of the province, but guest farms and ranches are now being established throughout the province. Horseback riding is the main recreational activity at all enterprises. Other types of farm-based outdoor recreational enterprise are discussed.

Planning for future recreational enterprises on farms must consider the attitude of the potential provider. A selective sample of Alberta farmers shows that about forty per cent of them are interested in the development of some type of recreational enterprise. Highest interest is indicated in the development of a snowmobiling enterprise.



A number of hypotheses of association are tested to determine whether interest varies significantly with location, farm type, farm size and land use on respondents' farms. No significant associations exist but the data suggest that operators of livestock farms and operators of large farms show highest levels of interest.

The patterns of participation in various activities on respondents' farms by persons not members of the family are examined. A strong association exists between present recreational activity and interest in recreational development.

The study has implications for rural development planning which are discussed in the concluding chapter.



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## CHAPTER I

### INTRODUCTION

Two major contemporary problems of society underlie the motivation for this study. The first is the increasing demand for recreational space, the second is the failure of agricultural incomes to increase in proportion to incomes in other sectors of the economy. Recreational enterprises based on farms could provide a partial solution to both problems by increasing the supply of recreational space and facilities, and by providing supplemental or alternative sources of income to farmers with a minimum amount of investment.

This study consists basically of two parts: first, a description and evaluation of several existing farm-based recreational facilities in Alberta; second, a study of farmers' attitudes to the feasibility and desirability of the commercial recreational development of their farms.

There is today a rapidly increasing demand for space and facilities for outdoor recreational activity. The prediction of future demand for recreational space and facilities based on simple trend extension is uncertain since new factors and relationships not now readily apparent may become significant in the future. Nevertheless "the



trends in amounts of recreation demanded can hardly be anything but upward" (Clawson and Knetsch, 1966:111).

The supply of land and water resources for outdoor recreation is controlled both by government at various levels of administration and by private enterprise. Increasing pressures on public lands have focused attention on the potential role of privately held lands in supplying the growing demand for outdoor recreational space and facilities. As a result the need for more research on recreation patterns on privately-owned land has been emphasized by Clawson and Knetsch who state that "the total recreation situation may, in fact, be very different than it appears when only the data on public areas is considered" (Clawson and Knetsch, 1966:207).

Farmers and ranchers hold a significant percentage of all land held privately; however their role in contributing to the supply of recreational space and facilities has been much less important than that of government or other private business. It is a basic premise of this study that farm and ranch lands could be utilized to a much greater extent in the provision of space and facilities for outdoor recreation, and that the attitude of the farmer or rancher is an important factor in considering the potential for such developments. The role of the farmer or rancher is especially important in view of the wide attention given to the problems confronting agriculture, and in view of extensive public programmes to alleviate economic



distress in the agricultural industry. Thus, this study is concerned mainly with the real and potential role of farmers and ranchers only, rather than the role of all private land owners.

#### Recreation--Introductory Concepts

Recreation is a term comprising a complex variety of activities pursued in leisure time. Implicit in this is the designation of recreation as an activity or inactivity of a special kind while leisure is a time period of a special kind (Clawson and Knetsch, 1966), namely "the time available when the basic disciplines of work, sleep and other basic needs have been met" (CRRAG, 1970). Rather than arriving at a precise definition of a recreational activity, Burton (1971) mentions three functions, relaxation, entertainment and personal and social development which it performs and suggests that recreation is antithetical or complementary to work, that is, there is no element of compulsion in the concept of recreation.

Recreational activities can be classified in three ways; by type, as being active or passive; by timing, as being undertaken on a part-day, day or overnight basis; and by location, as being either indoors or outdoors or in rural or urban surroundings (Burton, 1967). This study is concerned mainly with the provision of outdoor recreation facilities in rural areas to recreationists participating on a part-day, day or overnight basis.



Where overnight recreationists participate more than a day, accommodation is required, and considerable travel may be involved. Campbell (1966) differentiates between the recreationist and the vacationist, suggesting that they would be placed at opposite ends of a spectrum due to the contradictory nature of their aims and opportunities. He suggests that:

The recreationist, because the activity is dominant in the recreation experience will tend to spend less time traveling and will be less concerned with the nature of the journey from the city to the recreation area. . . . At the other end of this continuum is the vacationist who is concerned with seeing as many places as possible in a fixed time period. By this token their route will be circular and the journey will be of greater significance than any activity involved. (Campbell, 1966:88)

Farmers and ranchers can cater to the needs of both the recreationists and vacationists by providing facilities for recreationists from nearby centres of recreational demand and accommodation for vacationists who are passing through the area.

#### Outdoor Recreation--Trends in Demand and Supply

It is generally accepted that the demand for outdoor recreation is increasing. Clawson and Knetsch (1966) suggest that the causal factors for this are increasing population and urbanization, increasing leisure available due to a shorter working week and longer vacations, quicker, more comfortable and less costly means of transportation and increasing disposable incomes. It has been estimated that, if present trends continue, demand



for outdoor recreation in the U.S.A. may increase as much as fourfold by the year 2000 A.D. (Jensen, 1970:198), and a similar increase can be anticipated for Canada.

Demand for outdoor recreation is unequally distributed among the population with respect to geographic location, age, income, level of education and occupation (Jensen, 1970: 202). Burton (1967) emphasizes that the two major factors affecting the level of participation in outdoor recreation activities are the location of outdoor recreation resources with respect to potential users, i.e., urban areas, and the accessibility of the recreation centre to the place of residence. Moreover, there is considerable variation in demand for specific recreational activities, with the simplest activities often being the most popular.

A most salient feature of recreation resources is the spatial distribution of land and water resources having high capability for sustaining a variety of recreational activities. Characteristics of high quality recreation resources vary with recreational activity; some activities require a unique type of resource, while resources requirements for other activities can be satisfied almost anywhere. Conversely, certain land and water areas have high capability for very specialized forms of activity; for example, a shallow marsh may have high capability for supporting hunting of waterfowl but it may be entirely unsuited for swimming, fishing or water skiing.

Increasing consideration has been given to the role



of the private sector in meeting the demand for outdoor recreational space and facilities. Kozicky (1964) asserts that "the key to an effective supply of outdoor recreation areas is private facilities open to the public on a fee basis." A primary consideration in determining whether a recreation resource should be controlled by private enterprise or by a public agency should be the profitability of the enterprise managing the recreation resource. However, there are many reasons for not permitting development by private enterprises. According to McConnen (1964: 37) these are: (1) inadequate development, (2) single use in a situation requiring multiple uses or vice versa, (3) deterioration of some of the natural resources, (4) an undesirable impact on income distribution, (5) the inability of private enterprise to satisfy consumer demands, and (6) the inability of private enterprise to insure the necessary economic stability and provide a reasonable socio-economic environment.

#### Outdoor Recreation and Rural Development

The development of outdoor recreation enterprises<sup>1</sup> has often been cited as a possible solution to the poverty problem in certain rural areas. Characteristics of such problem rural areas are:

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<sup>1</sup>The term as used in this study refers to those enterprises for which fees are charged for recreational use of land, water or facilities, and for which direct economic values can be calculated. Another consideration is that such enterprises are privately owned.



- a. the existence of low per capita incomes relative to the remainder of the economy;
- b. relatively low and declining population densities, with a disproportionate number of older persons;
- c. the predominance of primary industries, especially agriculture;
- d. the underemployment of labor and to a lesser extent, of land resources;
- e. a shortage of capital in the area; and
- f. a lack of receptivity to technical, economic and social change (Burton, 1967:9).

The basis for poverty in agricultural areas is an economic situation in which productivity increases more rapidly than demand, making production resources redundant (Buckley and Tihanyi, 1967:41). Thus farmers are caught in an economic squeeze between rising production costs and stable or declining prices.

The primary aim of a rural development program is to raise the standards of living by increasing income levels. This would involve the reallocation of land and capital resources within agriculture and between agriculture and other industries, possibly recreation and tourism. A number of social and economic problems, such as the re-training of labor, would accompany such change, not the least being the adjustment in mental attitude of the people involved.

With regard to outdoor recreation enterprises,



demand is the most critical factor. Given favourable demand conditions, outdoor recreation enterprises could contribute to the economic development of rural areas in the following way:

- (a) they can increase incomes and employment directly within the areas;
- (b) through the multiplier effect, that is the spending and responding of income gained directly or indirectly as a result of these enterprises, they can increase the levels of local business activity;
- (c) they can attract new residents, thereby increasing the local population and stimulating local business activity generally;
- (d) they can provide new recreation opportunities for existing residents, thus increasing the levels of effective demands;
- (e) they can help to solve the most salient feature of the farm problem in these areas, by supplementing marginal incomes in agriculture. (Burton, 1967:13)

Burton further emphasizes that the achievement of these objectives will depend on the numbers of visitors which can be attracted to the area and by the types and locations of the enterprises themselves.

Several authors (Johnson, 1962, McConnen, 1962) have sounded a cautionary note against indiscriminate advocacy of outdoor recreation in rural development planning. Some of the drawbacks to the economic operation of outdoor recreation enterprises are: relatively small size of firm, limited market information, inelastic demand for recreation facilities, relatively low rates of return on capital and labour, susceptibility to fluctuations in the business cycle, weather variability, extreme seasonal patterns of demand, and the need for unusual management skills (Allee, 1966:1300, Clawson and Knetsch, 1966:243). Yet in some



cases there may be no alternatives for some communities.

#### Types of Farm-based Recreational Enterprises

The emphasis in this study is on outdoor recreational enterprises which are suitable for development on a farm or ranch. Of fourteen types of privately-owned outdoor recreation enterprises in the United States, Johnson and Davis (1962) found that only dude ranches, vacation farms, ski areas, shooting preserves and campgrounds were connected with a farm or ranch. Another study (Smith, Partain and Champlin, 1968) also mentions fishing waters, hunting areas and scenic and nature areas as being suitable for farm or ranch development. However, the most common type of farm-based recreation enterprises in Alberta at present is the vacation or guest farm and the guest or dude ranch.

A vacation farm has been defined as a "privately owned farm which provides guests with sleeping and eating accommodations as well as vacation activities" (Smith, Partain and Champlin, 1968:21). Thus these enterprises cater to both recreationists and vacationists. Often the attractiveness of the vacation farm is the peace, quiet and beauty of the rural landscape, qualities which may be referred to as the aesthetic resource. Recreation activities may be of the type which frequently occur on a farm, such as horseback riding, swimming, hay rides or fishing, or guests may participate in off-farm activities.



Guests may be families, adults only, or children only, and visits may be for any period of time during the season. Revenue from guests may supplement farm income or it may constitute a major portion of the total income. A study of vacation farms in Wisconsin (Christiansen, Staniforth, Johnson and Cooper, 1968) showed that of 16 vacation farms, recreational income was less than 20 per cent of farm income in 10 cases, greater than 20 per cent of farm income in 4 cases and 100 per cent of all income in two cases. It was suggested that the term "farm resort" be used for the last two cases, because of similarities to many commercial resorts.

Vacation ranches, guest ranches or dude ranches differ from vacation farms in that guest ranches "usually emphasize a western atmosphere with cowboy living accommodations and activities centering around horses" (Smith, Partain and Champlin, 1968:21). Guest ranches may be working ranches with recreation and accommodation as a primary or secondary source of income or recreation and accommodation may be the only source of income. Where recreation is the main source of income other recreation activities besides horseback riding may be present. In the ORRRC study (Johnson and Davis, 1962) it was found that a high (over 75 per cent) proportion of dude ranches surveyed had facilities or opportunities for fishing, hunting, swimming, cookouts and picnics, as well as horseback riding. The study also showed that sixty-nine



out of seventy-seven ranches were located in the western part of the United States.

Two types of hunting enterprise, the shooting preserve and the hunting area are described in the literature. A shooting preserve is a "privately owned or leased acreage on which artificially propagated game is released for the purpose of hunting, usually for a fee, over an extended season" (Johnson and Davis, 1962:39). A considerable variety in the nature of operations was found to exist depending on the presence of a number of land and water based recreation activities besides hunting. Over half of all shooting preserves studied in the ORRRC report were found to provide for hunting only. Over half of all shooting preserves were found to be individually owned, while a further 37 per cent were found to be owned by private clubs and corporations. Although the report does not state how many of the individual owners were farmers, farming was found to be the second most frequent primary use of land.

A hunting area is "an area managed for income from hunting of wild game" (Smith, Partain and Champlin, 1968: 130), and is often a supplementary enterprise to farming. Income is derived from charging access fees to property and may be done on an individual or club basis. Unlike the shooting preserve, game is wild, that is, the area is not stocked; however habitat improvement may be required in order to attract wild game.



A number of examples of the commercial development of farm ponds, lakes or streams for recreational fishing have been cited in the literature. Income can be obtained by charging access fees, by selling fish caught by guests, by leasing fishing waters to private clubs, by selling bait and tackle or by renting out boats. This type of enterprise could be combined with a campground vacation farm or dude ranch.

A recent phenomenon in outdoor recreation in Canada has been the rapid increase in the popularity of snowmobiling. Farmers and ranchers could profit from this activity by charging access fees for trail riding on the property or by operating a snowmobile rental enterprise. Accommodation could be provided for recreationists travelling considerable distances.

A farm or ranch could possibly incorporate features of all these types of enterprises; the combination of facilities provided are limited by the interest and ingenuity of the owner.

Rural Recreation Enterprises:  
A Literature Review

A large proportion of the literature on rural outdoor recreation enterprises is American in origin, and much of it is in the form of government publications. No publications by government agencies in Canada have appeared as yet, and Canadian literature is found mainly in the popular press and in a few cases in academic journals.



Some of the literature includes discussions of all types of rural recreation enterprises, while some pertains only to those enterprises which are clearly farm-based.

The first and most comprehensive survey of rural recreation enterprises in the United States is the Outdoor Recreation Resources Review Study Report No. 11, Private Outdoor Recreation Facilities (Johnson and Davis, 1962). The results of 1,119 questionnaires from a variety of types of enterprises and advertised listings for 117 vacation farms are analyzed. Greater government involvement in the role of the private sector in providing recreational facilities is recommended.

A United States Department of Agriculture (USDA) publication, Rural Recreation: A New Family Farm Business (1962), includes case studies of each of seven categories of recreation enterprises adapted to farms. Types of enterprises not mentioned in the previous section are picnicking and sports areas, camping, scenery and nature recreation areas, and the sale of recreation land or recreation use rights. Emphasis is placed on the type of governmental assistance available. A number of factors affecting the success of recreation developments on farms and ranches are discussed, including the attitude of the farmer, farm type, proximity to population centre, transportation and utilities, present extent and distribution of recreation facilities, location and character of recreation resources, and laws and administrative guidelines.



The same factors are emphasized in articles by Kozicky (1964) and Kern and Driscoll (1966).

A number of studies of rural recreational facilities have been produced at a regional, state, or county level within a span of a few years in the last decade. Jordan (1963) has described resource and locational characteristics and income and employment levels for a wide variety of rural recreation enterprises in Arkansas. Of a sample of 48 enterprises, 60 per cent were operated in connection with a farm. Holmes (1964) surveyed 49 out of a possible 278 rural recreation enterprises in Oregon and described the characteristics of each type of enterprise and made an economic evaluation of each type. Thirty-nine per cent of the enterprises were found to be operated in conjunction with a farm, but in most cases the recreation enterprise was a supplementary source of income. Moore (1964) in a study of thirty rural recreation enterprises in New England of which fourteen were farm-oriented, cites the need for relatively large capital outlay to provide the quality and quantity of services most in demand, as well as the high level of management skill required. Studies of two counties adjacent to the metropolitan area of Boston, Massachusetts (Foster, 1963a, 1963b) indicate that in this area a very small proportion (5 out of 228, and 8 out of 286) of private recreation facilities were found to be farm-based. Facilities catering to day users, such as riding stables, golf courses and private parks were among



the farm-based facilities. The success of a farm vacation cooperative association including fifty-three families in thirteen Ohio counties is described in a study by Davis (1964). It was found that some successful enterprises had been started with no additional capital investment.

A report by Bird and Inman (1965) summarizes information obtained from 254 recreation businesses in six areas, including three of the studies mentioned above. Economic characteristics of businesses suitable for farm development were studied. It was found that average net cash income was highest for shooting preserves and trout fishing lakes, and lowest for vacation farms and picnic areas. Conversely, average capital investment was found to be lowest for vacation farms, and highest for shooting preserves and fishing lakes. Other examples of successful farm recreation enterprises are described in articles by Edminster (1962), Dinsmore (1963), Hutton (1963), Kyle (1963) and Partain (1963).

A series of seven research reports on privately owned recreation enterprises in Wisconsin (Christiansen, Staniforth, Johnson and Cooper, 1968, 1969), deals with economic aspects of ski enterprises, cabin resorts, vacation farms, privately owned campgrounds, vacation farms, riding stables and privately owned shooting preserves. A more recent series of six reports (Cohee, 1970, 1971) studies user preferences as well as general characteristics of several types of private recreation businesses.



A wealth of technical information as well as management advice and description of several types of enterprise are included in a book by Smith, Partain and Champlin (1968). Similar in outlook but wider in scope, is a publication Guidelines to Planning, Developing and Managing Rural Recreation Enterprises, edited by Cornwell and Holcomb (1966). It contains articles on outdoor recreation economics, planning, design and management of rural recreation enterprises, experiences of operators and the role of government. The problem of liability risks entailed in operating recreation enterprises is discussed in an article by Bird (1968).

Rural recreation enterprises in Britain are described in a study by Burton (1967). Special attention is given to their role in the development of problem rural areas. Case studies of caravan sites and campgrounds show that profitability is affected by weather conditions during the holiday season and by the location of the enterprise. Consideration of various alternative types of recreation enterprise leads to the conclusion that provision of farm vacations is potentially the most attractive of all recreation enterprises to farmers in problem rural areas.

The paucity of research on farm-based recreation in Canada has been established in an article by Ironside (1971) which discusses potential for development of recreational income and real or potential conflicts between recreation and agriculture. The article also discusses the



vacation farm in Canada, noting that the provinces of Ontario and Nova Scotia are the most active in the development of a vacation farm programme. With regard to the situation in Ontario, a report by Philips (1969) describes two farm vacationing short-term courses in Ontario.

#### Farmer Attitudes: Literature Review

The importance of the farmer's attitude and interest as a factor in the success of a recreational enterprise has been mentioned in a previous section. In planning a programme for the promotion of farm-based recreation enterprises, it is important to know what farmers' attitudes toward the possibility of developing such enterprises are. Little research has been concerned with identifying the characteristics of the farmer who has a positive attitude towards such developments and thus is a potential provider. However two studies are especially pertinent.

The first study (McCurdy, 1965) compared the characteristics of woodland owners in Ohio who provided picnicking facilities for a fee with neighbours who did not provide facilities. It was found that small woodland owners providing picnicking as well as other recreational facilities for a fee, were more likely to be businessmen than farmers, were better educated, younger and more active in community organizations, had lived in the community for a shorter time and were more likely to be from an urban background. They were found to be more



active in outdoor recreation pursuits and this interest was in many cases the motivation for entering the recreation business. By comparison most non-providers were long-time residents of the community. Many of them had not provided outdoor recreation facilities because of the high development costs and because of possible invasion of their privacy.

Shelly (1971) in a study of landowners' attitudes towards the possibility of commercial recreation developments on private rural lands in Oregon tested a number of hypotheses about the relationship of a positive attitude to such developments to a variety of socio-economic and geographic factors such as age, education, proximity to population centres, land use, and awareness of government assistance. The only significant relationship discovered was a positive one between the amount of idle land and a positive attitude towards commercial development of outdoor recreation.

#### Objectives and Hypotheses

This study has several objectives, the first being to describe and analyse the characteristics of guest farms and ranches in Alberta, these being at present the most prevalent form of farm-based recreational enterprise in Alberta. The following characteristics are to be examined: location, agricultural and recreational characteristics, historical aspects, characteristics of



users, and management problems.

Because of the small number of farm-based recreational enterprises in Alberta, it was decided to include the whole province in the study. Attention was focused on the most common type of enterprise, the vacation farm or ranch, although the existence of other enterprises is noted.

The second part of the study has as its objective the assessment of the level of interest in a variety of types of farm-based recreational enterprises among farmers in Alberta. An attempt is made to relate farmers' interest to a number of factors such as farm type, and level of recreational activity, and to determine whether interest varies significantly within the province, in order to identify the potential providers of farm-based recreational facilities in a locational as well as a classificatory sense.

At the present time, in the Province of Alberta, a programme of assistance and information for farmers interested in commercial recreation developments is being initiated. Research in three sample areas has been carried out to ascertain interest levels in the concept of farm-based recreation facilities. Three areas were chosen on a basis of three factors: (1) resource potential, (2) economic situation, and (3) proximity to an urban centre (McKracken, 1972). However there is no statistical basis for extrapolating these findings to all farmers in Alberta



in order to formulate a general statement of interest level. Moreover, it is not known whether variation in any of the three factors would be associated with a corresponding variation in interest levels.

A major hypothesis of the second part of the study then is that interest in farm-based recreational facilities is a space-dependent variable, that is, interest will vary in different parts of the province which have differing recreational resources, types of agricultural activity, levels of income, and present levels of recreational activity. Interest will be affected by the farmer's perception of the recreational resource of the farm, by his perception of the demand for certain recreational facilities, by his need for additional income, and by his perception of potential conflicts between recreational and agricultural activities.

#### The Study Area

The Province of Alberta has a land area of 248,000 square miles and a water area of 6,485 square miles for a total area of 255,285 square miles. According to the census of 1971, census farms<sup>2</sup> covered an area of 77,354 square miles or about one-third of the total area, the area

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<sup>2</sup>A census farm as defined by the Census as of 1966 and 1971 is an agricultural holding of one acre or more with sales of agricultural products during the twelve months preceding the census of \$50 or more.

A commercial farm is a census farm with sales of agricultural products in the twelve months preceding the census of \$2500 or more.



of agricultural settlement being confined to the central and southern portions of the province with the outlier of the Peace River block in the west central part of the province. Agricultural settlement is limited to the west mainly by the topographic barrier of the Rocky Mountains and their foothills, which constitute a major recreational resource of the province. Northwards, agricultural settlement is limited by climatic factors, mainly the short length of the growing season.

The total population of the province in 1971 was 1,627,874, with over half of this being concentrated in the major centres of Edmonton and Calgary with populations of about 500,000 and 400,000, respectively, in 1971. These cities are a major source of demand for outdoor recreation. Rigby (1967:118) concluded that "the greatest area of recreational demand was the one lying within one hundred and fifty miles of Edmonton," and a similar recreational hinterland could be defined surrounding Calgary. Minor centres with populations ranging between 10,000 and 45,000 are Lethbridge, Red Deer, Medicine Hat, and Grande Prairie, in descending order of size (see Figure 1).

Population has nearly doubled in the past twenty-five years, most of the growth occurring in the two large cities. Changes in the rural-urban population structure from 1961 to 1966 are indicated in Table 1.

Attendance at recreational areas has increased considerably in the past few years, being composed both of





FIGURE 1



TABLE 1

## RURAL-URBAN POPULATION DISTRIBUTION IN ALBERTA

Population	1961	1966
Urban	843,211 (63.3%)	1,007,407 (68.6%)
Rural:	488,733 (36.6%)	455,796 (31.2%)
Non-farm	202,910 (15.2%)	178,198 (12.2%)
Farm	285,825 (21.5%)	277,598 (19.0%)
Total	1,331,944 (100%)	1,463,203 (100%)

Source: Dominion Bureau of Statistics, 1966 Census of Canada, Vol. 1 (1-8), Population, Rural and Urban Distributions.



Alberta residents and visitors from outside the province. Attendance figures for the Banff, Jasper, Waterton and Elk Island National Parks as well as for provincial parks indicate increased demand for outdoor recreation facilities. The number of visitors to national parks increased from 1.9 million in 1960 to 4.7 million in 1971, with the greatest increase in Jasper.<sup>3</sup> Similarly, the attendance at provincial parks has increased from 1.5 million in 1961 to 4.8 million in 1971.<sup>4</sup> That the national parks are important in attracting visitors to the province is indicated by the finding that 29.3 per cent of parties entering the province in the summer of 1966 (out of a total of 393,600) gave as their primary destination the national parks (Kates, Peate, Marwick and Co., 1967). Furthermore, of all trips conducted for pleasure (43.6 per cent of total), 69.5 per cent gave the national parks as their primary destination.

With increasing pressure on national and provincial parks it would seem reasonable that more attention be given to the role of private enterprise in supplying recreational space and facilities for outdoor recreation. This is especially important within the recreational hinterlands of Edmonton and Calgary where much of the lands are held privately, especially by farmers and ranchers.

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<sup>3</sup>Source: National Parks Division, Department of Indian Affairs and Northern Development, Canada.

<sup>4</sup>Source: Parks Branch, Alberta Department of Lands and Forests.



### Structure of the Thesis

The remainder of the thesis has been organized in the following way: Chapter 2 is a discussion of the methodology employed in the collection and analysis of data. Problems of sample size, sampling frame, quality of the data, interviewing procedures, and statistical tests used will be examined.

Chapter 3 presents the information obtained on existing guest farms and ranches in the province. Special attention is given to geographic factors such as location, resource use and origins of guests.

Chapter 4 presents the results of the analysis of a questionnaire on farmers' attitudes to recreational development.

Chapter 5 summarizes findings and draws the conclusions. Suggestions for further research are discussed.

The rationale underlying the two-fold approach in this thesis, represented by Chapters 3 and 4, is the necessity and relevance of examining the characteristics of the existing establishments in order to gain an understanding of the farmers' attitudes toward farm-based recreational enterprises.



## CHAPTER II

### METHODOLOGY

#### Existing Facilities

##### Information sources and interview procedure

Information obtained in three different ways formed the basis for several studies on farm-based and other rural recreational enterprises.

a. A study of vacation farms in the United States (Johnson and Davis, 1962) utilized the listings of an advertising brochure. Information from this source, however, was limited to that which the operator felt was essential for attracting guests and informing them of details such as rate structures, accommodation facilities and type of farm. Moreover, not all vacation farms in the U.S. advertised in this brochure.

b. A study of other types of rural recreation enterprises in the United States utilized information gained from a postal questionnaire which was standardized for each type of enterprise.

c. Several studies in which research was conducted in a smaller area (Foster, 1963a and 1963b; Holmes, 1964; Moore, 1964) were based on information obtained by personal interview.



In this study an attempt was made to conduct a personal interview with the operator of each guest farm and ranch in Alberta, in view of the small number of each enterprises. This necessitated a considerable amount of travel which, it was felt, was justified by the insight gained into the operation of a guest farm or ranch by a personal visit.<sup>1</sup>

Burton and Noad (1968:26-28) describe three types of personal interview technique. These are:

(a) the standardized or structured interview in which similar information is collected from each respondent for the purpose of classification and comparison. "The wording and sequence of questions are determined in advance, and these are asked of all respondents in exactly the same way."

(b) the semi-standardized interview method in which latitude in the wording and sequence of questions is allowed to suit the occasion and the respondent.

At its most refined level the interviewer operates only with a list of the data which he must obtain. The semi-standardized interview appears to be most useful in situations requiring the collection of data from groups which are heterogeneous . . . ; and which cover matters which are emotive or "sensitive." (p. 28)

(c) the non-standardized interview in which no attempt is

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<sup>1</sup>For example, one interview was overshadowed by an injury to a young boy, a guest at a ranch for children, who was taken to hospital suffering from a broken nose sustained during a softball game. Part of the interview with the operator of the ranch was conducted in his automobile enroute to the nearest hospital located about ten miles away.



made to obtain the same categories of information from each respondent.

As some comparable data such as number of guests and gross income was desired, the non-standardized interview was rejected as a research technique. Because each guest farm or ranch was expected to differ with respect to certain factors and because more insight could be gained into operators' attitudes by adopting an informal approach, it was decided to use the semi-standardized interview method. A check list of information to be collected was compiled; at times the interview was in the nature of a formal standardized interview, at other times, especially when considerable time was spent with the operator, information was obtained without having to refer to the list. The check list is presented in Appendix A.

Four operators in remote and scattered locations were contacted by telephone and a mailed questionnaire was sent out. The questionnaire was based on the check list but questions were formally stated. A personal letter accompanied each questionnaire. This method was less successful since one questionnaire was not returned and the interviewer did not have the opportunity of personally viewing the site of the guest farm or ranch.

#### Sources of addresses

There is no central registry of farm-based recreational enterprises in Alberta, and thus names and



addresses of operators of guest farms and ranches were gathered from a number of sources.

a. A listing of guest farms and ranches in the United States and Canada, the Farm and Ranch Vacation Guide, 1971-1972, contains six listings for Alberta.

b. The Alberta Visitors Guide for 1971, published by the Alberta Government Travel Bureau lists ten guest ranches and farms. Although the Guide states that these are working farms and ranches, investigation by telephone and mail showed that five of these are actually resorts of the dude ranch type and are not active in agricultural production. Three of the working farms or ranches are also listed in the Farm and Ranch Vacation Guide.

c. A form letter was sent to all District Agriculturists in the province, requesting information on the location of any farm-based recreation enterprises in their area. Two guest ranches in addition to the ones included in the above sources were located through replies to these letters.

d. Three additional operations were located through advertisements in the classified section of several newspapers.

e. The Alberta Government Travel Bureau distributes brochures for a number of guest ranches, including one which did not advertise in any of the above ways.

Fourteen guest farms and ranches in all were identified and contacted. Interviews were conducted with



ten operators in the summer and fall of 1971 and questionnaires were mailed in early winter of 1972. The information obtained will be discussed in detail in Chapter 3.

The farm vacation movement in Alberta grew rapidly in 1971 with the formation of the Great West Farm Vacations Association based in central Alberta, an association of farmers offering accommodation and recreational facilities for paying guests. As the venture was in the developmental stage at the time and few guests were being accommodated with the exception of three established enterprises included in the above listing, interviews with members of the association were not conducted. However, non-standardized interviews with two individuals directly involved in the organization of the association were conducted. Aspects of the operation of the G.W.F.V.A. will also be discussed in Chapter 3.

#### Postal Survey--Farmer Attitudes

##### The use of a postal survey

The purpose of this study is to determine whether or not Alberta farmers are interested in the development of outdoor recreational facilities as a supplemental or alternative source of income and to determine whether this interest is related to a number of selected variables. The virtual impossibility of gathering data from each of the more than 50,000 farmers in Alberta necessitated the use



of an appropriate sampling procedure, the choice of which is discussed in a later section.

The relative merits and demerits of the postal survey type of self-administered survey have provoked a considerable amount of discussion. The following are some of the advantages of a postal survey suggested by Burton and Noad (1968:19) :

- a. Postal surveys "cover a wider geographical area and a larger sample of the population (with given financial resources) than is possible by the use of an interview survey" (p. 19).
- b. The questions are totally standardized and therefore responses are totally comparable.
- c. The difficulty arising from the possibility of the interviewees' antagonism towards interviewers is avoided.
- d. The questionnaire can be answered at the convenience of the respondent.
- e. It is easier to reach members of the population who are home only infrequently.

The main disadvantage of a postal survey is that response rates are often very low, resulting in a non-probability sample and non-response bias which will limit the reliability of inferences made from the data. It has been empirically shown that the characteristics of non-respondents may be significantly different from those of respondents, and thus if the former were known, they would seriously affect the acceptance or rejection of



research hypotheses (Blalock, 1960:411). Reichmann (1961:269) asserts that "the researcher will be lucky if he gets more than 20 per cent of the members of a postal survey to reply," while Burton and Noad (1968:19) suggest that a return of between 30 to 50 per cent is usual.

Another disadvantage of a postal survey according to Burton and Noad (1968) is the danger of misreading or misinterpreting the question without the assistance of an interviewer. Thus the wording of the questionnaire is of great importance and pre-testing is essential.

#### Structure of questionnaire

The questionnaire consisted of two parts, the first containing questions on agricultural characteristics of the farm, the second focusing on interest in development of outdoor recreation facilities. The purpose of the section requesting information on agricultural characteristics was to provide a basis for testing hypotheses about the association of interest with farm type, farm size and land use. The second part listed five types of recreational activity from which income could be derived by charging fees and requested the respondent to indicate that he was "interested" or "not interested." Several reasons for interest or lack of it were suggested and the respondent was asked to indicate the appropriate reason. Space was provided for the respondent to mention reasons not listed.

Indication of participation in one or more of eight



common recreational activities by individuals other than members of the farm family was requested in order to test the hypothesis of an association between recreational activity and interest in its commercial development. Two other questions were concerned with the matter of payment of access fees by hunters and the perception of the farm as a recreational attraction by farmers.

The questionnaire was limited to a length of one page in order to increase rate of response.<sup>2</sup> A covering letter stating the purpose of the research project accompanied the letter. The letter and questionnaire are presented in Appendix B.

#### Sample size

Hagood and Price (1952:280) emphasize that in order to estimate the appropriate sample size the following is needed: designation of parameters to be estimated, range of unreliability permissible in estimates, and a rough estimate of the distribution of the characteristic being investigated.

In the present study the parameter to be estimated is the proportion of the population of the universe of Alberta farmers who are interested in farm-based

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<sup>2</sup>Burton and Noad (1968) cite a study (Sletto, 1940) which indicates that the length of a questionnaire has no significant effect on the rate of response. However, they point out that questionnaires ten, twenty-five and thirty-five pages in length were used and suggest that a difference in response rate might occur between questionnaires of one and ten pages.



recreational facilities. A wide range of unreliability was felt to be permissible and from the pre-testing of the questionnaire it was found that about 40 per cent of the respondents indicated interest in one or more types of recreational enterprises. Tables of sample size (Arkin and Colton, 1963:151) show that for a universe population of 100,000--which is considerably more than the number of census farms in Alberta--a confidence level of 95 per cent, reliability of plus or minus five per cent, and an expected rate of occurrence of the characteristic being sampled of 50 per cent, a sample size of 383 would be necessary. A smaller sample size would decrease the reliability of inferences made. Assuming a response rate of 40 per cent, the number of questionnaires to be mailed to yield a sample of sufficient size to satisfy the above requirements would be about 1,000. Unfortunately, response rates turned out to be considerably lower.

#### Sampling frame

The most comprehensive listing of farmers in Alberta was found to be the Post Office Householder Directories, which list the names and addresses of all patrons of the post office in the province by local post office and by federal electoral division. Farmers and ranchers are identified by means of an occupation code which was determined by the local postmaster or by the individual himself. This designation of an occupation might not



conform to the census definition, and thus it is likely that the total number of farmers and ranchers listed will not be the same as the number according to census figures.

The householder directories cover only those areas not covered by commercial directories. Commercial directories cover the post offices of Edmonton, Calgary, Red Deer, Camrose, Lethbridge, Hardieville, Medicine Hat, Redcliffe and Grande Prairie. Farmers receiving their mail directly from the post offices in these places are not listed, but listings of the names and addresses of farmers receiving their mail by rural delivery are included, with the exception of Medicine Hat and Redcliffe. No listings are available for Lloydminster since the post office is in the province of Saskatchewan. The total number of farmers excluded from the sample, however, is likely to have been quite small.

The names and addresses of Indians living on reserves and members of Hutterite colonies, where these could be positively identified were excluded from the sample. It was felt that because of unique agricultural practices and tenure systems, the questionnaire would not be appropriate.

#### Sampling procedure

Probability sampling is essential in making valid inferences regarding a larger population. "The distinguishing characteristic of a probability sample is that every



individual must have a known probability of being included in the sample" (Blalock, 1962:392). This is in contrast to purposive or judgment sampling which does not allow for the formulation of generalizations for a larger population.

Four types of probability sampling are systematic, random, stratified random, and cluster sampling. In systematic sampling, the method used in this study, rather than using a table of random numbers, a unit is selected from a list at a fixed interval, the size of the interval being determined by the desired size of the sample. It is important, however, that the first unit be selected at random.

The advantage of a systematic sample over random sampling is that it is much simpler and less time-consuming when an extremely long list is used, as is the case in this study. Cochran (1963:206) claims that systematic sampling is as precise or more so than simple random or stratified random sampling for the reason that systematic sampling is spread more evenly over the population.

The total number of farmers listed in the householder directories was not given and thus it was difficult to calculate the exact interval required to produce a sample size of approximately 1,000. An interval of one in fifty-five was chosen, based on the assumption that the number of farmers in the household directories would be between the number of commercial farms (48,971) and the number of census farms (69,411) in 1966. The



estimate proved to be fairly reliable, as a total sample of 1,040 was drawn after the first name had been selected at random from the first fifty-five names.

Questionnaire returns and the problem of non-response

As is the case with many mailed questionnaires a low rate of response was experienced, despite the brevity of the questionnaire and the enclosure of a stamped, self-addressed envelope. The questionnaire was mailed during the third week of July, 1971, and by the first week of August 196 questionnaires had been returned. Of these, 175 (16.8 per cent) were usable, 15 were returned uncompleted for various reasons, and 6 were returned by the post office because the address was unknown.

In order to increase the sample size and to allow for testing for non-response bias, a second partial mailing was undertaken in the third week of August. Ninety questionnaires were mailed to a selective sample of non-respondents. Twenty-seven usable questionnaires (30.0 per cent) and six uncompleted questionnaires were returned.

The response to the second mailing brought the total response to 202 usable questionnaires or 19.3 per cent of the total as well as 21 (2.1 per cent) uncompleted questionnaires, and 6 that were returned by the post office. This was considerably smaller than the desired sample size. Reasons given for non-completion were retirement (ten out of twenty-one), sale of farm (five out



of twenty-one), rental of farm (three out of twenty-one) and alternate occupation (three out of twenty-one). The distribution of respondents is shown in Figure 2.

Lehman (1963) has suggested several methods which can be used in testing for non-response bias. As mentioned previously, non-response bias may occur if respondents differ from non-respondents with respect to the variables under investigation. One method is to compare the distribution of several known factors in the population with that of the sample.

In this study a frequency distribution of sample farm sizes was compared with the frequency distribution for the sizes of census farms in Alberta according to the 1966 Dominion Bureau of Statistics Census of Agriculture. A goodness of fit test<sup>3</sup> was conducted to see if the frequency distribution of the sample farm sizes was similar to that of the total population of farms. Table 2 contains the observed number of occurrences for each farm size class and the expected frequencies which would occur if they were completely representative. A large chi-square value indicates that the fit is poor and inspection shows that the sample is biased towards operators of large farms.

The poor fit could also be due to two other factors. First of all, as has been pointed out, the sampling frame from which the sample was drawn listed a considerably

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<sup>3</sup>For a discussion of this test see Appendix C.



## LOCATION OF RESPONDENTS

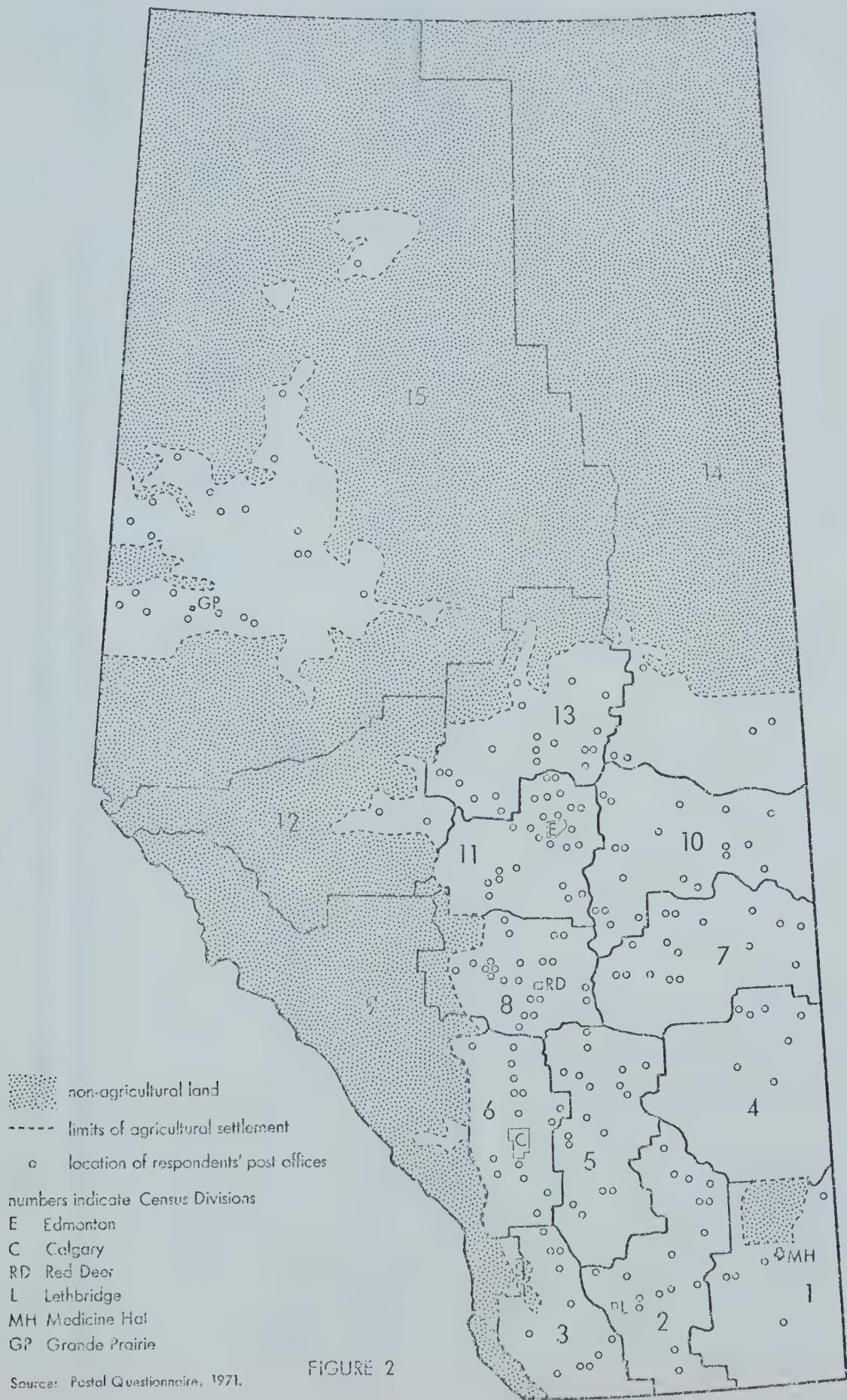




TABLE 2

## OBSERVED AND EXPECTED FREQUENCIES FOR FARM SIZE CLASSES

	Size of Farm in Acres								
	Under 69	70- 239	240- 399	400- 559	560- 759	760- 1119	1120- 1599	1600- 2239	Over 2240
Observed frequency from sample	4	30	27	24	29	35	17	12	18
Expected frequency from census figures	9.6	35.7	46.5	31.0	24.5	23.3	12.5	5.9	7.1

Chi-square 45.8, 8 degrees of freedom, significantly different at .005 level.



smaller number of names than the number of census farms in Alberta in 1966. It is likely that this greater number of farms indicated by census figures would be composed of operators of small farms who were included in the census but did not give their occupation as farmer or rancher for the householder directories. Secondly, a five year gap exists between the taking of the census in 1966 and the administering of the postal questionnaire, during which time the number of census farms decreased from 69,411 to 62,702. It is possible that consolidation of smaller farms occurred in this time, resulting in fewer small farms and more large farms. Unfortunately, results of the 1971 Census of Agriculture are not yet available for farm sizes. In spite of these two factors, however, it is possible that the sample is biased toward operators of large farms.

Even if the sample were shown to be representative for one factor, farm size, it would not necessarily ensure representativeness for the research variable, interest in recreational development, for which no prior information is available. In this case the suggested method would be to send questionnaires or conduct interviews with a probability sample of non-respondents and compare these returns with the initial returns.

A comparison of results from the first and second mailings showed that 74 out of 175 (42.2 per cent) respondents to the first mailing indicated interest in recreational development as compared to 8 out of 27 (29.6



per cent) from the second mailing. A test of difference of proportions<sup>4</sup> was conducted and the null hypothesis of no significant difference could not be rejected at a .01 level of confidence.

A third method is to compare early and late returns and to make inferences on the basis of observed differences. There is an increasing amount of evidence to support the assumption that trends from early to late returns continue on into non-responses. An analysis of these trends would thus allow inferences to be made regarding the characteristics of the non-respondents. If a trend becomes stronger or remains constant then the use of statistical tests of significance is justified.

The questionnaires from the first mailing were divided into early and late returns. Again a test of the differences of proportions was conducted on the research variable. Of the early returns, 14 out of 36 respondents (38.9 per cent) indicated interest, while of the late returns 60 out of 139 (43.2 per cent) indicated interest. The null hypothesis of no significant difference between the proportions could not be rejected at a .01 level of confidence.

In conclusion, the proportion of respondents indicating interest is not significantly different between the first mailing and the second mailing and between early and late returns of the first mailing. Thus, despite the

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<sup>4</sup>For a discussion of this test see Appendix D.



low rate of return, it will be assumed that the sample is truly representative and statistical tests of inference will be carried out. This assumption is based on the methodology suggested by Lehman (1963), which by his own admission is in need of further empirical verification. In addition it is important to note that the smallness of the sample size will lessen the reliability of inferences made from the data.

#### Analysis of data

Information from the questionnaire was coded and transferred to computer cards for computer processing. Additional information such as the census division and the highway distance to the nearest metropolitan area were also included on the cards. Highway distances were calculated as the shortest distance between the respondents' post office and the centre of Edmonton or Calgary, depending on which is closer.

The purpose of statistical analysis of a probability sample is twofold (Harvey, 1970:362):

- a. to estimate the characteristics of a population by means of descriptive statistics, and
- b. to identify relationships among attributes in the population.

The main characteristic to be estimated in this study is the percentage of Alberta farmers indicating interest in five types of recreational enterprise. These



percentages were computed from the data and confidence intervals were calculated.<sup>5</sup>

The relationships to be identified among attributes have been mentioned in the discussion of research hypotheses in Chapter 1, and include the association of the attribute of the farmer's interest in recreational development with geographical and agricultural attributes of his farm.

The appropriate method for testing the hypothesis of association between two variables using data which is only classificatory (i.e., measured in a nominal scale) or ranked (i.e., measured in an ordinal scale) is the calculation of the chi-square value. The chi-square test provides a method of evaluating whether or not frequencies which are empirically obtained differ significantly from a specified theoretical distribution. Data obtained is presented in a contingency table with a series of columns representing the classes into which one variable has been divided and a series of rows representing the classes into which the other variable has been divided. A matrix of cells containing the appropriate frequencies constitutes the table (see Appendix C for an explanation of the calculation of chi-square values and the structure of contingency tables).

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<sup>5</sup>For a discussion of this procedure see Appendix E.



## CHAPTER III

### EXISTING FARM-BASED RECREATIONAL ENTERPRISES

A total of fourteen guest farms or guest ranches which are presently working farms or ranches or have been in the past were identified from the sources listed in the previous chapter. The operator of one of these did not return the mailed questionnaire, while contact with two other operators indicated that they had not yet received any guests, although in one case, that of a farmer living 100 miles south-east of Edmonton, a listing had been placed in the Farm and Ranch Vacation Guide for four years. The other farmer, located 120 miles east of Edmonton had not advertised at all. Both are located over five miles from a paved road. It may well be that lack of local advertising and the location off main highways east of Edmonton<sup>1</sup> may account for the lack of paying guests.

In addition to these enterprises, seven enterprises were identified which are advertised as being guest ranches, but where, in fact, no agricultural production is taking

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<sup>1</sup> In a study of recreational travel patterns of Edmontonians, Rigby (1967:88) found that "the dominant pattern of weekend travel within Alberta was to the west and south of Edmonton. About seventy per cent of the trips were to destinations in these directions."



place or has been in the past. All of these are located near the Rocky Mountains, three are between Calgary and the Rockies and two are near the main highway west of Edmonton near the mountains.

Response to letters sent to all District Agriculturists in the province requesting information as to the presence of farm-based recreation enterprises in their respective areas was incomplete, with only twenty-nine out of fifty-seven D.A.'s replying. It is possible that some existing guest farms and ranches were not identified, but it is likely that all the established ones have been located. Four guest farms or ranches which were to have commences operation in the summer of 1972 were identified but the operators were not contacted. In addition, two references were made to guest ranches which had ceased operation, both of them located south of Calgary. Other types of rural recreation facilities mentioned were seven trail-riding establishments (two near Calgary, three near Edmonton, one near Grande Prairie and one near Red Deer), two beach and camping enterprises, two snowmobile rental enterprises, one fish pond and a number of church camps. Many of these enterprises clearly are not connected with working farms or ranches.

Partial or completed information schedules were thus obtained from eleven guest farms or ranches. The description of characteristics of these enterprises in the following sections is based on this information.



Location and Accessibility

The municipal districts in which guest farms and ranches are located are indicated in Figure 3.<sup>2</sup> Two of the enterprises are located within 10 miles of Red Deer and Calgary, one is located 25 miles from Edmonton, four are located between 40 and 60 miles from Calgary, Edmonton, or Red Deer; one is 80 miles from Lethbridge, two are between 90 and 100 miles east and west of Edmonton, and one is over 440 miles from Edmonton. Distance to cities over 25,000 population is summarized in Table 3.

TABLE 3  
DISTANCE TO URBAN CENTRE OVER 25,000

	Distance in Miles					Total
	0- 24	25- 49	50- 99	100- 149	Over 150	
Number of operations	2	2	5	1	1	11

Distance to a paved highway varies considerably. Only one enterprise is located on a paved highway, three are five miles or less from a paved highway, one is between five and ten miles, five are between 11 and 20 miles, and one is 21 miles from a paved highway.

Distance from a paved highway was perceived as

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<sup>2</sup>The exact locations of the guest farms and ranches are not given in order to preserve the confidentiality of the respondents.



being an advantage to some operators. One operator expressed the opinion that the fourteen miles of gravel road to the nearest paved road limits accessibility and thus helps preserve the peace and quiet of the countryside, the aesthetic resource. A certain type of guest is catered to, namely the person who seeks isolation and quiet. By keeping heavy traffic away the gravel road is acting as a filter to screen out potentially undesirable guests. Another operator complained about damage done to his property by non-guests. Although the ranch is located twenty-one miles from a paved highway this does not act as a deterrent; presumably improvement of the road would increase incidence of damage.

The operator of the most remote enterprise, one which is over 440 miles from a major metropolitan centre, Edmonton, stated that the location is both a disadvantage and an advantage. It is disadvantageous in its remoteness from population centres, while it is advantageous since the remoteness is attractive to guests who wish to "get away from it all."

A contrasting attitude is held by the operator of the largest of the recreational facilities, who complained of poor quality in the eighteen mile gravel road to the nearest pavement. Paving of the road would increase accessibility both to the ranch and to a nearby ski resort, thus hopefully raising low occupancy rates.

Proximity to the margins of agricultural settlement



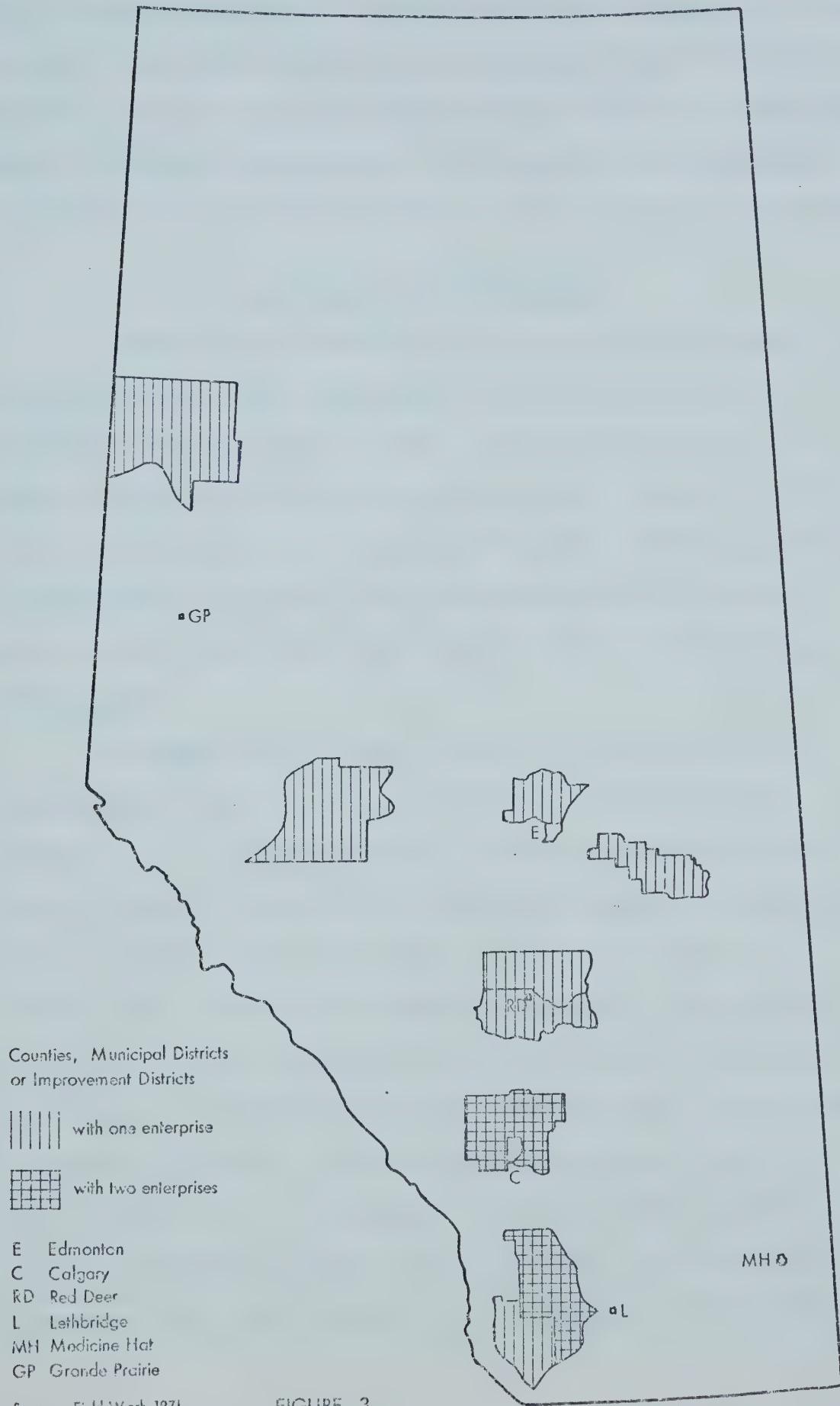


FIGURE 3



is a characteristic of a majority of the enterprises. For example, the above-mentioned large guest ranch is located adjacent to the Rocky Mountains Forest Reserve. Similarly, six of the other enterprises are within fifteen miles of the western and northern limits of agricultural settlement.

#### Land and Water Resources

Farms and ranches are located on terrain which varies considerably. One guest ranch is located in mountainous (local relief over 2,000 feet) terrain. Two guest ranches are located in hilly (local relief is 500 to 2,000 feet) terrain in the Rocky Mountain foothills, two are located in rolling (local relief 100 to 500 feet) terrain while the five others are in flat to undulating countryside.

A surprisingly small number of enterprises are located on or near major water bodies. One ranch is adjacent to a lake approximately three square miles with several smaller lakes on the property; however, these lakes are too shallow for major water sports. Another has a sizable river flowing through the property, and a third has a lake on the property, but several miles from the farm house. A fourth ranch has a small (about three acres) spring-fed reservoir on the property which is used as a water supply and for swimming. The only other ranch reporting bodies of water on the property reported the presence of two small creeks. By comparison, the ORRRC



report (Johnson and Davis, 1962) showed that sixty-five out of seventy-five dude ranches surveyed had ponds or lakes, streams or rivers on or adjacent to their property, while 45 per cent of vacation farms sampled reported water resources for recreation on their own premises.

#### Historical Aspects

Operators were asked how many years they have been offering accommodation and recreational facilities to paying guests. Results are indicated in Table 4. Of five enterprises located in the Calgary area or to the south, four have been operating as guest ranches for more than eight years; while of the six remaining enterprises, only two have been operating for more than four years. Thus the farm and ranch based recreational enterprises have been established for a longer time in southern Alberta.

TABLE 4  
NUMBER OF YEARS OF OPERATION

Number of years farming or ranching	3	3	5	9	10	11	21	25	25	33	70
Number of years recreation	1	3	3	9	10	11	13	1	4	5	9

The total number of years farms or ranches have been operating as agricultural enterprises is also indicated in Table 4. In some cases the establishment of recreational enterprises coincided with establishment of the agricultural



enterprise, in others farming or ranching had been the main economic activity for many years before diversification into recreation and accommodation occurred.

The previous occupation of the present operator was asked for. Eight of the present operators had been farming or ranching all their lives. Four of these had been farming at the present location; while the other four had been farming or ranching in another location before purchasing the present operation. One of these four had previously owned a ranch in Montana. Of the three who had not previously been farmers, one had worked on electronic installations, another was a guide and outfitter, and the third had been a carpenter.

A variety of reasons for establishing income-producing recreation and accommodation facilities was given. In several cases the enterprise was the out-growth of providing accommodation and recreation facilities for non-paying guests. Two operators stated that they had decided to derive income from accommodation after many years of hosting and cooking for friends and relatives. One operator had provided accommodation for thirty-five years for a variety of people; real-estate agents, teachers, government employees, and school children, due to the central location of the farmhouse in the community, but only recently had started advertising as a guest ranch.

The need for alternative source of income due to



the declining profitability of farming was given as a reason by only one farmer. Another, a poultry farmer had offered accommodation to children for one summer strictly on an experimental basis. A rancher in the southwestern part of the province had originally been asked to accommodate guests from a neighbouring guest ranch which had closed down. The extra income had proved quite helpful in sending two children to university. In two cases the wife's interest was the motivation for the establishment of a guest ranch. In another case, the desire to help children was given as the reason for establishing a children's camp.

#### Agricultural Characteristics of Operation

Seven of eleven enterprises are advertised as guest ranches while only two are referred to as farms. However, these designations are not wholly accurate, and questions were asked which sought to clarify the characteristics of the agricultural operation.

Six of the enterprises are livestock ranches in the strict sense of the word, that is, income is obtained mainly from the sale of livestock, usually cattle but also horses or sheep. These operations are all located near the margins of agricultural settlement and farm size ranges from 1,120 to 3,200 acres.<sup>3</sup> The percentage of land under cultivation is low, ranging from 0 per cent to 18 per cent. Conversely, the proportion of land which is range land (unimproved

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<sup>3</sup>In owned and leased land.



pasture) and/or forested is high, ranging from a low of 60 per cent to a high of 88 per cent.

Two operations are considerably more diversified, income being obtained from sale of cattle, sheep, or horses as well as from the sale of cash crops such as wheat or rapeseed. Coarse grains are grown as feed or as a cash crop, and hay is produced for feed. Both operations are advertised as being ranches. Farm sizes are 640 and 1,200 acres, about 33 per cent of land is cultivated and about 50 per cent and 60 per cent, respectively, of total land is partly wooded, unimproved pasture. Farm sizes are summarized in Table 5.

TABLE 5  
SIZE OF FARM OR RANCH

	Number of Acres							
	Under 161	161- 320	321- 640	641- 1280	1281- 1920	Over 1921	Total	
Number of operations	4	0	1	2	3	1	11	

The four other cases are unique. One is a seventy acre poultry farm which, except for the farm yard, is under coniferous forest cover. Another is a 160 acre former dairy farm, presently operating as a mixed farm. The dairy barn has been converted into a facility providing



accommodation for guests. Cash crops are still produced and a few beef cattle are kept, but the dairy operation was phased out nine years ago, when the operator was unwilling to make the necessary capital investments to remain in a competitive position in the industry.

In two other cases the change from agricultural to recreational use of land has proceeded to an even greater extent. One farm was operated as a quarter-section family farm for many years, with mixed crop-livestock production. At present the land is utilized as pasture for the horses which are the main recreational attraction. Income is derived wholly from recreation and accommodation. In the second case, a fifty acre plot of land is leased from a larger working cattle ranch. A farm house which was formerly empty has been converted into a lodge, and a barn is used to stable the horses of the guest ranch. All of the land is range land which is sparsely wooded. These last two cases are not working farms or ranches at present, but were so at one time and thus are included in the study.

With the exception of the last mentioned case, all farms and ranches are owner operated; one of these is owned in a partnership, the remainder are individually owned. Eight of eleven operators are full-time farmers or ranchers. Of the remaining three, one is a part-time guide and outfitter, another is a part-time laborer, and the third is the local post-mistress.

All farms and ranches have livestock of some kind.



The number of cattle and horses in 1971 is indicated in Table 6.

TABLE 6  
LIVESTOCK ON FARMS AND RANCHES

Livestock	No. of Farms and Ranches
Horses and Ponies	
No. of animals:	No. of operations:
under 5	1
5-10	0
11-20	4
21-30	4
over 30	2
Total	11
Cattle: Beef and Dairy	
No. of animals:	No. of Farms
0	3
1-10	1
11-25	2
26-50	1
50-100	2
100-200	1
over 200	1
Total	11

Horses are found on every farm or ranch, the smallest number being on the poultry farm where there are only three ponies. All others have more than ten horses,



the maximum number being fifty, of which over half are used for recreational riding. In all cases, some horses are used for recreational riding; in some cases they are also utilized in ranching operations or are raised for show or for breeding purposes. Only three farms or ranches do not have any cattle, these being the poultry farm and the operations where recreation is the primary activity. Dairy cattle are raised on two of the farms or ranches and sheep or hogs are raised on another two. The largest beef herd is 300 animals, although this figure varies through the year.

#### Characteristics of Accommodation and Recreation Facilities

Differences in type of facilities and accommodation offered can be delineated with respect to a number of factors such as scale of operation, total accommodation capacity, types of recreation emphasized, origins of guests, number of visitors, and others.

#### Type of guests

A major distinction can be made between farms or ranches which cater to children only and those which cater to all age groups, especially families with children.

Five of the enterprises cater primarily to children and in many respects resemble summer camps. Generally children between the ages of nine and fourteen are accommodated, although one ranch takes children as old as



seventeen years of age. In four of these cases, horseback riding is the main recreational attraction; each child is assigned a mount to look after for the duration of the stay, which generally is a week, two weeks, or even longer in a few cases. Riding instruction is given and may be the main reason for the child's visit and trail rides are usually the important activity. In all cases, swimming is secondary in importance; in four cases, children are transported up to fifteen miles for beach activities, in a fifth, a river flowing through the property provides adequate bathing facilities. Cookouts, crafts, nature hikes, group games, and participation in farm work were mentioned in connection with these places.

Differing opinions on the importance of a scenic countryside were expressed by the operators. One, the operator of the largest enterprise located in a largely cultivated, slightly rolling countryside near a small city, suggested that the scenic resource is of little importance, the main attraction of the farm being the riding instruction offered. Children are not aware of the scenic resource, as the horses are the most important part of the operation, and activity centres around the farmyard with little recreational use of the rest of the farm. According to this view, the physical resource base is relatively unimportant to the successful operation of the farm. The guest farm is thus virtually a riding academy with the accommodation provided. This contrasts



with the attitude of an operator who commented that the hills and wooded areas of the ranch were important in attracting guests in addition to the activities offered. Considerable stress is placed on the scenic attractiveness of this ranch in its promotional material.

The other six operations cater to all age groups, thus a greater variety of visitors is likely to be present at any one time. Usually families with children are accommodated, however, children without adults, single adults, or couples without children may also be present. Where families with children are accommodated, it may well be that the farm is used as a base from which to tour the surrounding countryside and participate in activities such as rodeos or country fairs in the community. Activities on the farm or ranch are still important but are less structured.

Operators could supply very little information on the socio-economic background of guests. One operator stated that most guests on her children's farm were children of professional people, another stated that guests ranged from children of welfare recipients to children of professional people. An operator of a family-type guest ranch suggested that a considerable number of guests were professionals, but no other information was available.

Facilities, occupancy rates,  
and numbers of visitors

The total number of people which can be accommodated



varies considerably between enterprises, and most enterprises generally operate considerably below capacity. Capacity for farms and ranches is summarized in Table 7. The smallest enterprise can accomodate only four people, while the largest can accommodate seventy to seventy-five guests.

TABLE 7  
ACCOMMODATION CAPACITY

Total Accommodation	Number of Operations
under 5	1
5-9	2
10-19	3
20-29	2
31-40	1
41-50	1
over 50	1
Total Capacity = 226 persons	11

The type of accommodation varies from bunkhouses to log cabins to farmhouse accommodation. An interesting feature is that in many cases accommodation has been provided by renovation of existing farm buildings, the best example being that of the renovation of a medium sized (20' x 60') dairy barn to provide a large kitchen-dining room on the first floor, and a large room sleeping ten to fourteen people in the former loft, and a large recreation room. Additional accommodation is available for six people in the former farmhouse, while the owner and his wife live in a converted chicken barn. A cabin on the property is



provided for guests, or is rented to people working or studying in the nearby city. Considerable cost was involved in the renovation; the owner estimated that \$4,000 in materials had been spent, but labor costs were difficult to estimate since he had done all the work himself in the previous three winters.

Another example of the renovation of farm buildings to provide accommodation is a children's guest ranch where the old farmhouse has been converted into a bunkhouse sleeping ten children. Furnishings are very simple, but electricity, heat, and cold running water are provided. Investment in this case was under \$500, the major cost being the purchase of steel bunk beds.

Extra rooms in the farm or ranch house provide partial accommodation in seven of the eleven cases, but in every case this is supplemented by accommodation in cabins, tent cabins, or a bunkhouse. A further example is worth mentioning, that of a children's farm where a double garage fixed with bunk beds provides sleeping facilities for fourteen children. In addition, a former machine shed has been renovated to provide sleeping room for six children.

The ranch with the largest accommodation facilities (seventy to seventy-five persons) has thirteen log cabins, three of which are advertised as being modern, that is, equipped with showers. All cabins were standing when the present owner purchased the ranch ten years ago, but were



in a state of disrepair and have undergone extensive renovation since. An estimate of an investment of \$70,000 in renovations was made, but the reliability of this estimate is unknown. A large lodge and a separate dining room-kitchen are other major buildings in addition to the ranch buildings.

Children's ranches have a total accommodation for ninety-six persons, while the family-type ranches have accommodation for approximately 130, over half of which is provided by the large operation mentioned above. The total number of people accommodated in any one year is limited by the total accommodation available, and is influenced by the length of stay, length of the season, and by rates of occupancy.

The unit of individual stay for the children's ranches is usually one week, with some staying for two weeks and some for the whole season. For family-type farms and ranches the length of stay is much more variable; two of the operations offer horseback riding facilities for day use by local people. Records for the length of stay are not kept, but two operators estimated that it is about one week. One of these mentioned that the length of stay varies from overnight to six weeks. It was mentioned by another operator that people from more distant locations would stay longer than those who had travelled a lesser distance.

Seasonality affects the total number of guests. The



length of school vacations imposes a constraint on the length of the season for children's ranches; they are generally open during the months of July and August, with one being open for only six weeks. Five of the family-type enterprises advertise that reservations are accepted on a year-round basis; in practice, however, the season extends from June to early September. The large operation mentioned above is usually open in winter, but was closed for a few winters due to higher heating costs and vandalism. However, the location near a major ski resort should be advantageous to an all-year operation.

An attempt was made to determine rates of occupancy, number of visitor days for each enterprise. A visitor day is defined as one guest spending one day at an enterprise. Difficulties were encountered due to both a lack of information and the variability in accuracy of the given information. The estimates by enterprises catering to children are the most accurate, as visits are generally of consistent length. However, not all operators of children's ranches could state the total number of visitors but could give the average occupancy rates, so that the number of visitor days could be calculated, given the total accommodation capacity. Several operators of family-type enterprises keep guest registers which list the names and addresses of guests. Combined with the operators' estimates of average length of stay, this source of information was used to estimate total visitor days. The guest book could



also be used to estimate the number of parties as well as number of visitors, assuming that each person signing listed all members of the party. In many cases, all members of a family appeared to be listed, but it is quite possible that in some cases they were not.

Where guest registers could not be examined, as in the case of mailed questionnaires, the operators' estimates of total number of visitors and average length of stay are used to estimate the number of visitor days. By multiplying this estimate by daily or weekly rates, gross income from the recreation enterprise could be determined, and checked against stated gross income. Where this was done, the calculated estimate and the stated amount were found to be quite close.

Total accommodation capacity, number of visits, and occupancy rates where known, are summarized in Table 8. Two observations are noteworthy:

1. Well-established children's camps have the highest number of visitor days. One operator reported that many applications had been turned down and that in the future only girls would be accommodated. A second operator reported that accommodations were filled for one or two weeks near the end of July, but a slack period was evident near the end of August. Both of the two children's ranches reporting low occupancy rates were in their first year of operation, and had not advertised extensively.

2. Although occupancy rates for family-type



TABLE 8

ACCOMMODATION CAPACITY, NUMBER OF VISITORS AND PARTIES, ESTIMATED OCCUPANCY RATES AND ESTIMATED VISITOR DAYS, 1971

Recreational Enterprises	No. of Years of Operation	Total Capacity	No. of Visitors	No. of Parties	No. of Occupancy Rates (estimated) %	Visitor Days (estimated)
A	9	70-75	N/A	N/A	N/A	N/A
B <sup>a</sup>	10	40	65	..	70	750
C <sup>a</sup>	9	26	N/A	..	95	1380
D	5	20	47 <sup>b</sup>	22	N/A	200
E	5	18	25	N/A	..	175
F <sup>a</sup>	3	12	N/A	..	80	500
G <sup>a</sup>	1	10	16	..	20	110
H	8	10	86	26	N/A	400
I	13	10	60 <sup>b</sup>	37	N/A	400
J <sup>a</sup>	1	8	12	..	15-20	84
K	3	4	2	1	1	14

<sup>a</sup>Children's guest ranch or farm.

b1970

N/A = Not available.



enterprises were not calculated, it would appear that they would be rather low since the season is longer, but visitor days are fewer than for the three children's ranches. Two of the enterprises, including the largest one, had no guests at all at the time of the interview. Another of the operators mentioned a highly variable occupancy rate with July having the highest rate.

The ranch with the least capacity reported only two guests in 1971, a hunting party from the United States. This may be due to lack of advertising and a remote location, fifteen miles from a paved road and 120 miles west of Edmonton.

#### Origins of guests

Detailed information on the origins of visitors was available only for the three enterprises maintaining a guest register. This was analyzed in an attempt to determine whether these facilities are supplying a local recreational demand or a more distantly located demand.

Two of these enterprises are located within five miles of each other in the Rocky Mountain Foothills, about fifty miles southwest of Calgary. One, enterprise A,<sup>4</sup> is not a working ranch; recreation is the main function, but land for the operation is leased from a working ranch. The other, enterprise B, is a large working ranch where recreation is a supplementary form of income. The third

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<sup>4</sup>These designations are not the same as those for Tables 8 and 12.



enterprise, the former dairy farm mentioned previously, is located just outside the city limits of Calgary, and about eighty miles east of Banff National Park. The number of visitors and the number of parties from the various geographical areas were summarized and expressed as percentages of the total number of visitors, for the last two seasons previous to the time of the interview. The origins of visitors to the three enterprises are presented in tabular form (see Tables 9, 10 and 11) and in cartographic form (see Figures 4, 5 and 6).

The tables show that a substantial proportion of visitors originate outside of Alberta; this ranges from 43.7 per cent for enterprise A to 82 per cent for enterprise C. The proportion of visitors of non-Canadian origins ranges from 14.2 per cent for enterprise B to 46.2 per cent for enterprise C.

If we assume that length of stay increases with increased distance from the guest's home, the assumption being based on an observation made by one of the operators, then the proportion of visitor days for persons of non-Albertan origins would be higher than the proportion of Alberta visitors. It is also possible that guests staying for only a short while might not sign the guest register, thus increasing the apparent proportion of longer-staying guests of more distant origins. Enterprise C has a substantial but undetermined number of day-users from the nearby city. In addition, a two-week camp for



TABLE 9  
ORIGINS OF GUESTS--ENTERPRISE A

Origin	No. of Guests (1969-1970)	Percentage of Total
Calgary	51	28.9
Edmonton	41	23.2
Other--Alberta	7	3.9
 Total--Alberta	 99	 56.3
British Columbia	12	6.8
Saskatchewan	7	3.9
Manitoba	2	1.1
Ontario	12	6.8
Quebec	11	6.2
Nova Scotia	3	1.7
 Total--Canada, outside Alberta	 47	 26.7
 Total--Canada	 146	 83.0
United States	14	8.0
Europe	16	9.0
 Total--non-Canada	 30	 17.0
 Total	 176	 100.0



TABLE 10  
ORIGINS OF GUESTS--ENTERPRISE B

Origin	No. of Guests (1969-1970)	Percentage of Total
Calgary	20	18.6
Edmonton	12	11.3
Other--Alberta	14	13.0
Total--Alberta	46	42.9
British Columbia	12	11.3
Manitoba	8	7.4
Ontario	23	21.4
Quebec	3	2.8
Total--Canada, outside Alberta	46	42.9
Total--Canada	92	85.8
United States	9	8.4
Europe	4	3.7
Australia	2	1.8
Total--non-Canada	15	13.9
Total	107	99.7*

\*Does not total 100.0 per cent due to rounding off numbers.



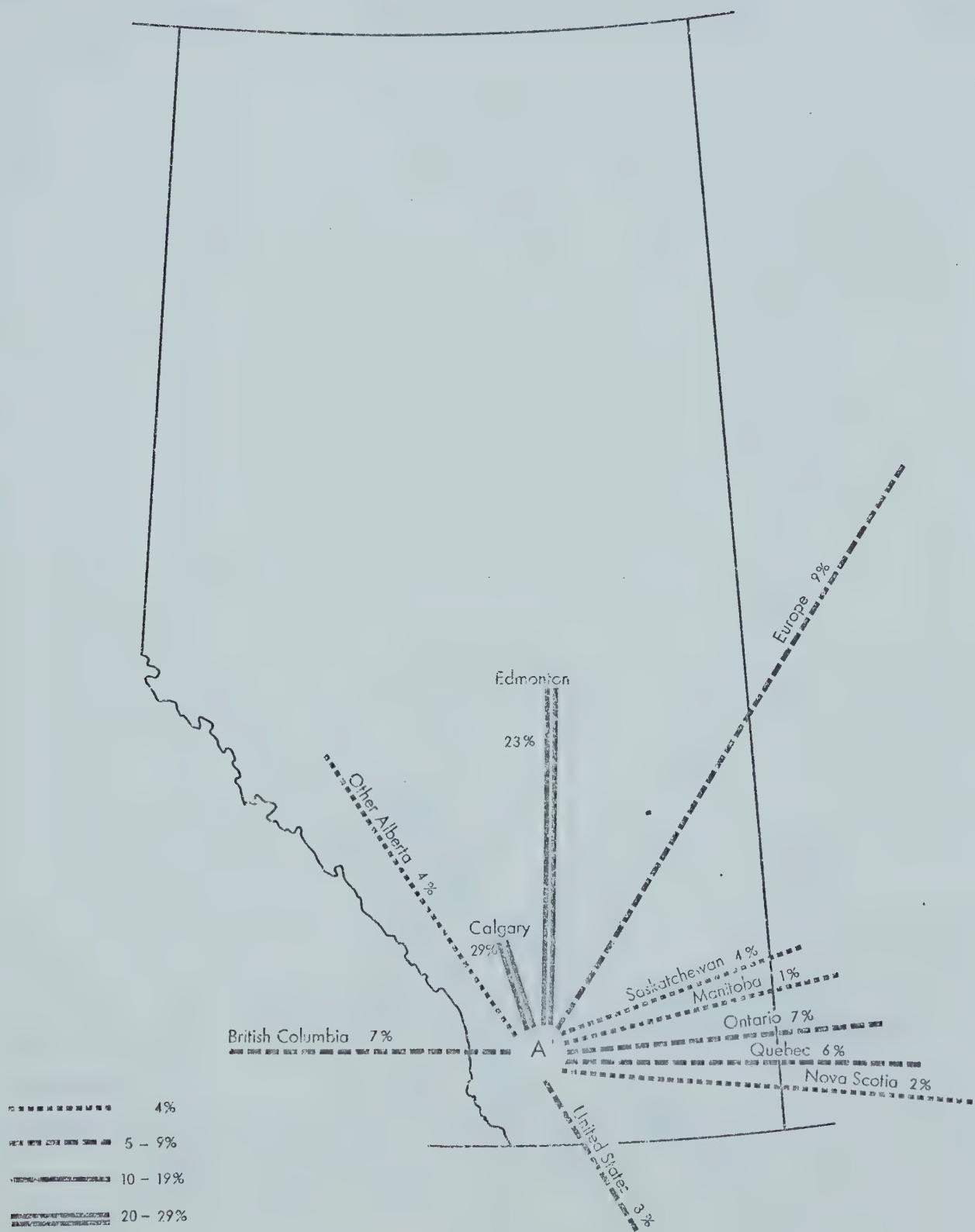
TABLE 11  
ORIGINS OF GUESTS--ENTERPRISE C

Origin	No. of Guests (1970-1971)	Percentage of Total
Calgary	3	4.6
Edmonton	4	6.1
Other--Alberta	2	3.1
Total--Alberta	9	13.8
British Columbia	7	10.8
Ontario	14	21.5
Quebec	5	7.7
Total--Canada, outside Alberta	26	40.0
Total--Canada	35	53.8
United States	18	27.6
Europe	7	10.8
Japan	5	7.7
Total--non-Canada	30	46.1
Total	65	99.9*

\*Does not total 100.0 per cent due to rounding off numbers.



## ORIGINS OF GUESTS , ENTERPRISE A

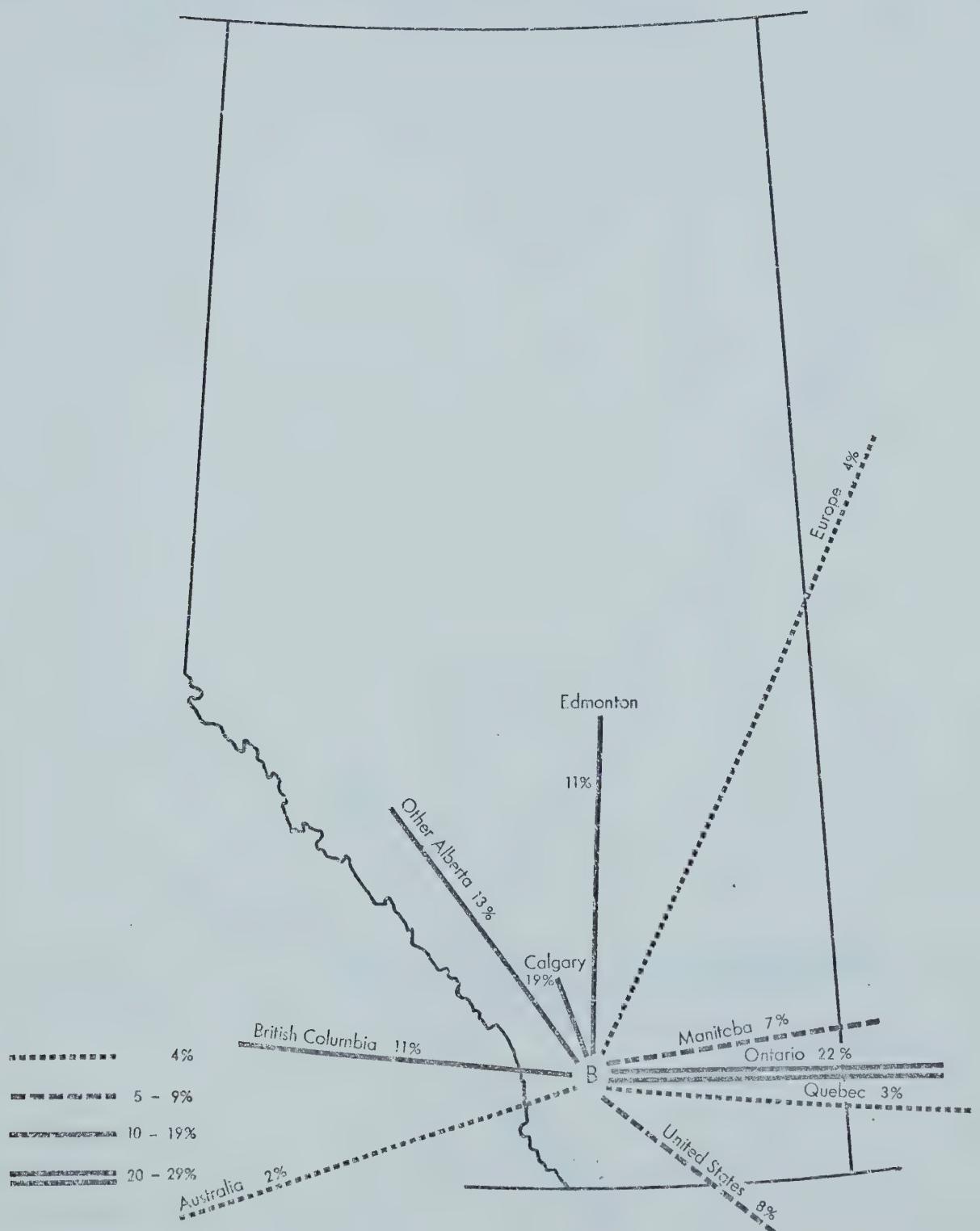


Source: Field Work, 1971.

FIGURE 4



## ORIGINS OF GUESTS, ENTERPRISE B

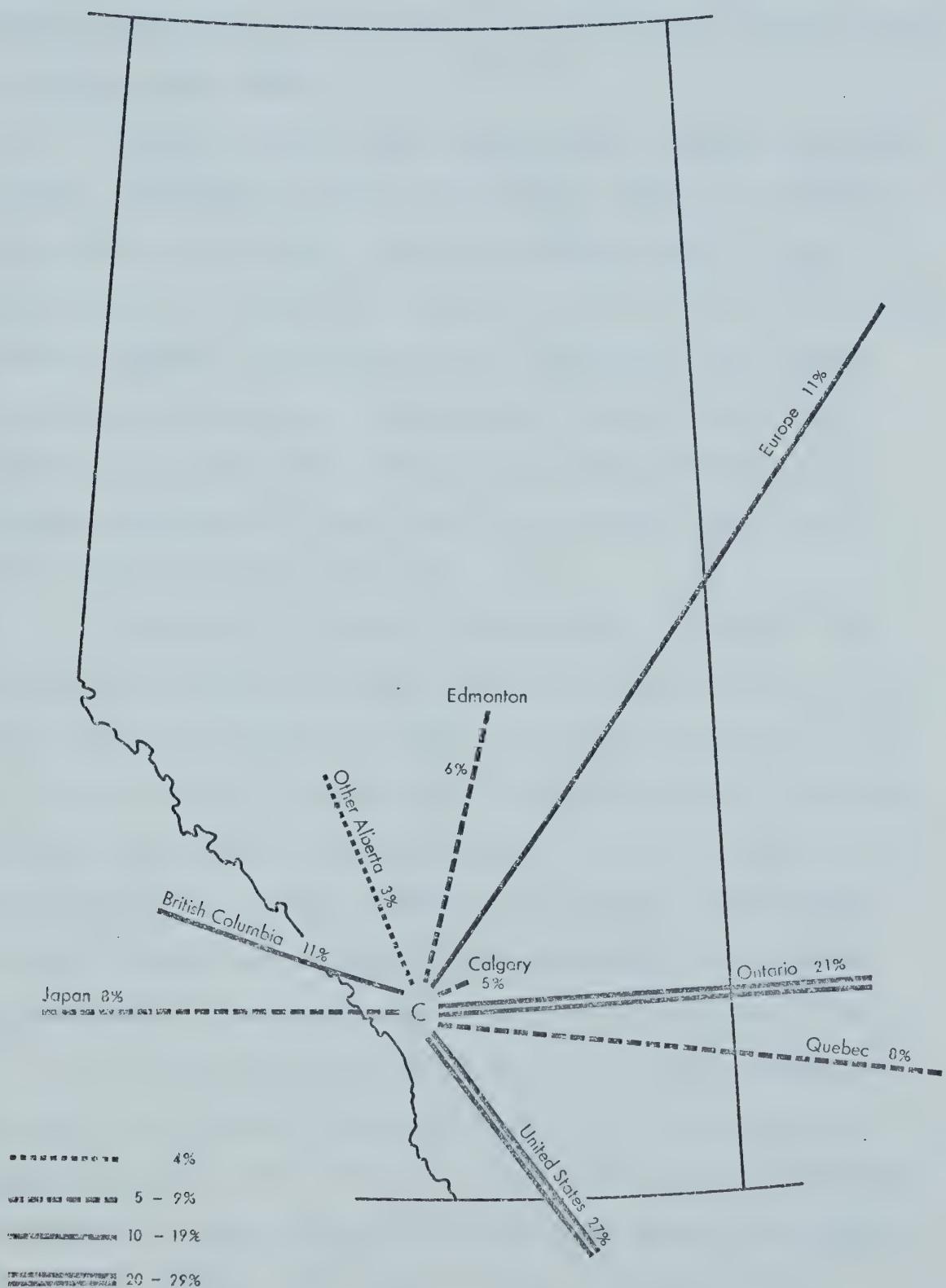


Source: Field Work, 1971

FIGURE 5



## ORIGINS OF GUESTS, ENTERPRISE C



Source: Field Work, 1971

FIGURE 6



girls was run in 1971; the origins of these guests are unknown and were not entered in the table, but if the origins were local, the proportion of Albertan guests might be greater than shown.

Taking the presented information as being reliable, however, enterprise C has a noticeably higher percentage of non-Canadian guests. This is probably due to its proximity to a city which attracts tourists from many areas outside Canada. According to the operator, most guests arrive by rail or air, and visiting the city is a major activity. On the other hand, most guests travel by private automobile to the other two enterprises, due to their more isolated locations.

A majority of guests originating in Alberta come from the metropolitan areas of Calgary and Edmonton. An equal number of guests at enterprise A originated at each of the two cities, while Calgary was the origin in nearly twice as many cases in enterprise B. In this latter case, the nearest town, about fifteen miles away, contributed as many visitors as Edmonton did. Edmonton and Calgary were origins in an equal number of cases for enterprise C.

British Columbia and Ontario are the origins of the greatest number of guests, due in the first case to proximity and in the second to high urbanization and large populations. Manitoba contributes fewer guests, but more than Saskatchewan. The small number of guests from Saskatchewan might be due to the lower levels of urban-



ization and thus greater rural population, who would not be attracted to the type of enterprise under discussion.

The distribution of guest origins in the U.S.A. is strongly oriented towards the central and northeastern states and California. The fact that no guests were reported from Montana, the state closest to Alberta may be due to intervening opportunities created by numerous dude ranches in that state.

Less detailed information on visitor origins was supplied by the remaining operators. The operator of a children's ranch northwest of Calgary estimated that the "majority" of guests came from Calgary, 15 to 20 per cent from the U.S.A., and a few from Edmonton, small towns in Alberta, Saskatchewan, and eastern Canada.

The majority (75 per cent) of guests at a children's farm midway between Calgary and Edmonton are from these two cities, the remainder being from small towns and outside the province. Guests had come from as far away as Paris, France, in previous years. Another children's farm in the same area received guests primarily from Edmonton, due mainly to the fact that advertising was concentrated in that city's daily newspaper because it was felt that there was less competition there than in the Calgary area.

Two children's farms or ranches, one twenty-five miles north and one ninety miles east of Edmonton received guests who were, with one exception, from that city.



A guest ranch located north of Grande Prairie received guests mainly from Grande Prairie and Dawson Creek, the two largest cities in the area, as well as a few from Edmonton, Red Deer, and as far away as California. Enquiries had come from eastern Canada and the U.S.A.

From the above it appears that guests at children's farms and ranches originate primarily within the province, while a larger percentage of visitors to family-type farms or ranches originate outside the province. It is not known for how many guests the visit to the farm or ranch is the major purpose of the trip or whether it is part of a more extended vacation, as a result of the lack of information provided by the guest registers and the lack of interviews with guests.

#### Economic Characteristics of Enterprises

Operators were asked to supply the following economic information about their enterprises: present capital value of land, building, equipment, and animals, present capital value of recreation and accommodation facilities, gross and net income from agriculture, and gross and net income from recreation. In most cases, information was given freely, however, there is some missing information. When respondents could not give exact values, they were asked to estimate within what range of values the figure would lie.

The information obtained is presented in Table 12 and is subject to the following considerations:



TABLE 12  
ECONOMIC ASPECTS, 1970

Recreational Enterprise	Farm <sup>b</sup>	Recreational and Accommodation Facilities		Gross	Net	Gross	Net	Recreation and Accommodation Income in \$		Percentage Recreation Income of Off-Farm Employment	Off-Farm Employment
		Farm	Recreational	Accommodation	Facilities	Recreation Income in \$	Accommodation Income in \$	Recreation Income in \$	Accommodation Income in \$		
A	Over 175	50			N/A	N/A	N/A	N/A	N/A	N/A	N/A
B <sup>d</sup>	N/A	15		14		2.5-5	7	1-2.5	30	No	
C <sup>d</sup>	50-75	8.5		N.I. <sup>e</sup>		N.I.	12	5	100	No	
D	50	5		5-10		1-2.5	.7-.8	.2-.25	10-20	No	
E	30-40	10		5-10		N/A	N/A	.25-.5	N/A	Yes	

a \$ = thousands of dollars.

b Including land, buildings, machinery and livestock.

c Estimated by operator.

d Children's guest ranch or farm.

e N.I. = No agricultural income.



TABLE 12--Continued

Recreational Enterprise	Farm <sup>b</sup>	Recreational and Accommodation Facilities		Gross	Net	Gross	Net	N/A	3.5	..	..
		Farm Income in \$ <sup>a</sup>	Farm Income in \$ <sup>a</sup>						Recreation and Accommodation Income in \$ <sup>a</sup>	Percentage Recreation Income of Farm Income <sup>c</sup>	Off-Farm Employment
F <sup>d</sup>	50	5	N/A								No
G <sup>d</sup>	75-100	1	15	2.5-5	.9	.2	.2			10	No
H	0 <sup>f</sup>	5-10	N.I. <sup>e</sup>	N.I.	5	.25-.5	.5			100	Yes
I	75	2.5-5	5-10	1-2.5	1	.5	.5			30	No
J <sup>d</sup>	100	1	65	..	.4-.5	..	..			..	No
K	50-75	Under 1	Under 2.5	.5-1	.1	..	..			..	Yes

<sup>a</sup>\$ = thousands of dollars.

<sup>b</sup>Including land, buildings, machinery and livestock.

<sup>c</sup>Estimated by operator.

<sup>e</sup>N.I. = No agricultural income.

<sup>d</sup>Children's guest ranch or farm.

<sup>f</sup>Property is leased.



1. Land values for agriculture are lower than land values for some other uses. Land values near an urban area may be inflated due to speculation, or because of competition for prime recreational land. One operator estimated his land to be worth five dollars an acre if agricultural value only were considered, but if the possibility of subdividing for recreational use were taken into account, land values might be one hundred times that amount.

2. The difference between gross agricultural and gross recreational income is fairly straightforward, but the difference between the net incomes is less obvious. Separate accounts are kept in some cases, but even where this is done certain expenses apply to both aspects of the total operation. For example, money spent on livestock feed would be at the same time an agricultural expense and a recreational expense if it were spent on feed for a string of horses essential to the recreational enterprise. Similarly, capital investment in recreation and accommodation might appear to be small if only slight renovation to an existing house were made; initially, however, that house may have represented a sizeable capital investment.

3. Information obtained was for 1970, the year previous to the year of the interview. Gross and net farm income can fluctuate widely from year to year due to crop failure, hail damage, variable prices, and a variety of other factors.



4. Information for recreational enterprises for the year 1971 is presented in cases where that was the first year of operation.

A number of observations can be made from Table 12:

1. In several cases, net returns from recreation and accommodation were negative, that is, expenses were greater than receipts. The three enterprises reporting zero or negative net recreational income had been in operation three years or less. In one of these cases, the operator described his operation as a pilot project. The initial expense of establishing the operation might well be responsible for the low net returns. The highest recreational incomes were reported for the enterprises which had been in operation for a relatively long period of time.

2. Both net and gross recreational incomes are rather low, but it must be considered that they supplement agricultural incomes, and may provide a more dependable source of income.

3. The proportion of net recreation income to gross recreation income vary from zero to forty per cent or possibly higher.

4. In view of relatively low capital investment on recreation and accommodation, it would appear that returns to capital are quite high. Again it must be remembered that recreation represents an alternative use of land and buildings which originally may have been heavily capitalized.



Returns to labour, however, are unknown, since the amount of labour expended was not obtained.

5. In eight out of ten cases income from recreation and accommodation is less than income from agriculture and is considered to be a supplemental form of income. In the two other cases, the transition to recreational land use is complete and there is no agricultural income; in one of these cases, however, there is an off-farm source of income from employment.

6. Capital expenditures on recreation and accommodation included renovation of existing structures, construction of bunkhouses, purchase of horses, saddles and bridles, and installation of plumbing and heating.

Operators were asked to estimate the major operating expenses involved in the recreation and accommodation operation. Due to insufficient detail and accuracy of the information obtained, only a few generalizations are warranted:

1. Food was mentioned as being the major expense in six cases. Wages paid to labour were the major expense in one case.

2. Feed for horses, heating fuel, labour, advertising, and liability insurance were the other expenses mentioned.

#### Management Aspects of Enterprises

##### Labour

Labour requirements vary considerably, depending on



the scale and type of operation. Enterprises catering to children generally require one supervisor for five guests as well as kitchen help, riding instructors and secretarial help. Family-type enterprises require less supervisory help but work-loads fluctuate widely depending on the number of guests present. In all types of enterprises wages are low and work is seasonal.

In six of the enterprises surveyed, the farm family was able to supply all necessary labour requirements. A common practise is for the wife to do the cooking and secretarial work while the teen-aged children act as supervisors and riding instructors. In one children's ranch, a partnership between two brothers, one of whom operates the ranch while the other supervises the guests, takes them on trail rides and drives them to a nearby lake for swimming; the wife does the cooking while a teen-aged daughter is paid to assist in the kitchen and in supervising guests. This is a satisfactory arrangement at present, but outside help will be needed when more guests are accommodated.

The remaining operations require more help than the farm family can provide, and employ from one to five persons during the summer. In most cases these are older teenagers who have been guests at one time and have returned to work for the summer, and often they are from outside the province. Often there are requests for work from young former guests which cannot be met. Scarcity of



labour is not a problem for the older enterprises, the only complaint being the difficulty of obtaining kitchen help.

Lack of supervisory personnel was the main reason given by the operator of a children's farm which has operated for only one summer as a pilot project, for being hesitant about accommodating more children. Accommodations for eight children at one time were available, but only four at one time could be supervised properly.

#### Advertising

Operators were asked what forms of advertising are used in publicizing their facilities. Two publications were cited as being the most commonly used:

1. The Farm and Ranch Vacation Guide for 1971-1972, previously mentioned in Chapter 2, is published every two years in New York City. A separate publication contains all Canadian listings. Rates for advertising are \$70.00 for two years.

2. The Alberta Accommodation Guide for 1971, a publication of the Alberta Government Travel Bureau has a section listing guest farms and guest ranches. Listing is free of charge in return for the right to conduct an inspection of the enterprise. The Guide is available in A.G.T.B. offices and is sent out in response to all enquiries received by the office.

Two other forms of advertising were mentioned.



1. Brochures have been prepared which are sent to various travel bureau offices and on request to people making enquiries. These give a variety of information on farms and ranches including the rate structure.

2. Advertisements are placed in travel or vacation sections of the classified advertisements of weekly and daily newspapers in the province. Two enterprises also advertise in newspapers or magazines published outside of the province.

The number of enterprises using each type of advertising in 1971 is as follows:

<u>Farm and Ranch Vacation Guide</u>	5
<u>Alberta Accommodation Guide</u>	5
Brochures	6
Newspaper or magazine advertisements	7

Three enterprises used only one form of advertising, four enterprises used two forms, two used three forms and one used four forms of advertising. Of the three enterprises using only one form, two used the Farm and Ranch Vacation Guide and one used the local newspaper. These three are the most northerly enterprises and have been operating for three years or less. Two of the three reported the lowest number of guests in 1971. On the other hand, the enterprises using three or four forms of advertising have all been operating for more than eight years.

With one exception the enterprises having the greatest numbers of guests all advertised in the



Accommodation Guide. The exception is an enterprise which advertised mainly in the newspaper of the religious denomination of which the operators are members, as well as in the daily newspaper of the nearest city. Three enterprises which were not in Accommodation Guide in 1971 have placed listings in the 1972 edition.

Word-of-mouth was mentioned as being an important form of advertising in three cases.

Visitor satisfaction is expressed by the number of return visits which were as much as 75 per cent of total visits in one case, with some guests returning for the fifth summer. Another operator estimated return visits to be 50 per cent of total visits, with some guests returning four years in a row, while four operators reported they had "quite a few" return visits.

#### Rate structure

Rates are quoted as being daily or weekly rates, and vary with the quality of accommodation and facilities provided. For children's farms or ranches weekly rates are charged, ranging from \$42.00 per week to \$70.00 per week for accommodation, food, and facilities. Daily rates for family-oriented enterprises range from eight dollars per day for food and accommodation to fifteen dollars per day, per person. Extra amounts are charged for horseback riding.



### Attitudes of Operators

Remarks by several operators suggest that personal satisfaction gained through encounters with guests and through operation of the enterprise is as valuable as the economic benefit. Two operators mentioned that the recreation enterprise is both financially and personally rewarding and has more financial security than farming. None of the operators reported any conflict between recreational and agricultural activity.

Ten out of eleven operators reported that they plan to expand in the future. The eleventh operator was not sure whether the operation would continue in 1972, lack of time being the main constraint.

The operators of two ranches for children stated that they did not cater to adults because of management problems associated with the consumption of alcohol. Two operators of family-oriented farms or ranches implied a certain selectivity in their choice of guests. They felt that only a certain type of person could appreciate a farm or ranch vacation. An unappreciative person would not be welcome, although no problems were reported.

### The Great West Farm Vacation Association

The pattern of vacation farm and ranch activity has been undergoing considerable change due to the formation of the Great West Farm Vacation Association which was



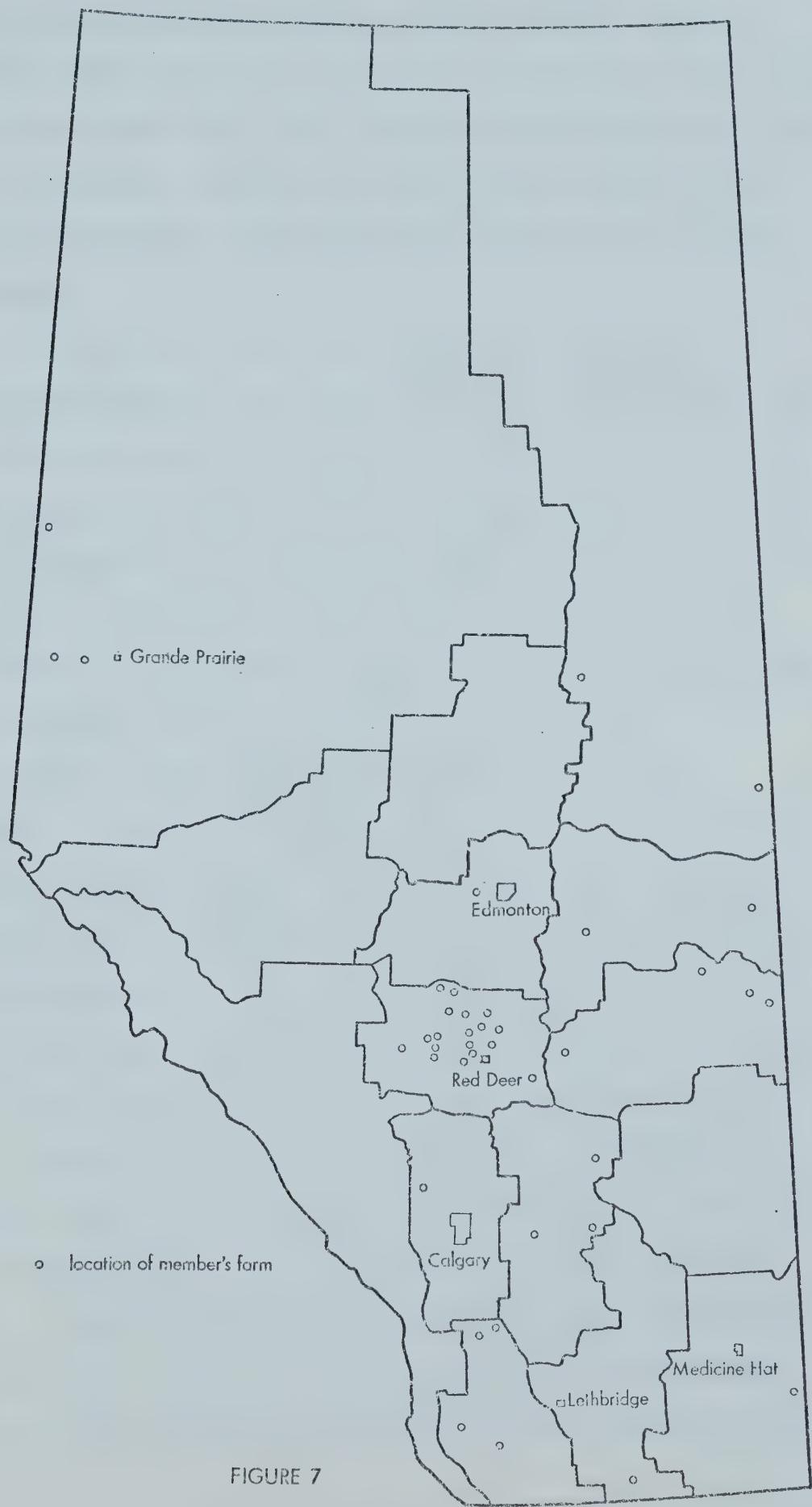
organized in April, 1971.<sup>5</sup> This is a farm organization originally set up to promote farm and ranch vacations in Alberta and to assist members in the cooperative advertising of accommodation.

The idea for such an organization originated with a social worker in the County of Lacombe, located north and west of Red Deer, who was concerned with the problem of low farm incomes. At the time of organization the Association had a membership of seven; this had increased to thirty-five by July of 1971 and to sixty by July of 1972, although all members do not necessarily offer farm vacations. Members are concentrated in the area west and north-west of Red Deer where the Association was first organized, but all parts of Alberta are now represented by the members (see Figure 7). Publicity was given the project by the press and on radio and through advertising in newspapers in Alberta and British Columbia. The Association receives funds through a nominal membership fee and awaits financial support from the provincial government. Additional revenue has been generated by a ten per cent fee paid on all bookings made through the Association's central office. Although the original intention was that all

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<sup>5</sup> Information discussed in this section is based on personal interviews with Mr. D. Wilcox, Department of Social Development, Lacombe, Alberta, July 20, 1971, and Mrs. L. Castleman, Secretary, Great West Farm Vacation Association, Bentley, Alberta, July 20, 1971 and July 4, 1972, and on mimeographed pamphlets produced by the Association.







bookings be handled through the central office, this policy has been modified so that the prospective guest may deal directly with the farmer offering accommodation. This makes it somewhat difficult to determine how many guests have been received by each member without contacting him individually.

Forty-three farms and ranches are listed on a mimeographed pamphlet, and the Association also advertises in the 1972 Alberta Visitor Guide. Four of the farms and ranches previously operated as a vacation farm or ranch and are included in the discussion in the previous sections. Accommodation offered by these farms is of three types, rooms within the farm home, cabins or cottages on the farm yard and camping areas for tents and trailers.

Efforts have been made to utilize existing facilities in order to minimize capital investment, as the demand for this type of facility is as yet uncertain. Most farms offer accommodation for fewer than eight people, with the exception of the enterprises discussed in previous sections. Seven of the farms are open to children only. A majority of farms and ranches have horses and feature riding as an activity. Swimming and fishing are other activities advertised, but generally these occur in the surrounding area. In the pamphlet frequent mention is made of recreational and scenic attractions within the area. Attractive features of the farms or ranches themselves are participation in farm activities, hospitality of



hosts, home cooking, and the peace and quiet of farm life, the aesthetic resource.

It is difficult to ascertain what effect the great increase in the number of guest farms and ranches will have on existing patterns of use. In addition to satisfying a local demand for farm holidays, it is hoped by members of the Association that vacationists can be attracted from Europe, the United States, and Japan.

#### Summary

Eleven guest farms and ranches were studied. These are scattered throughout Alberta, but older enterprises are located in the Calgary area and to the south. A location near the western margin of agricultural settlement is characteristic of six of the enterprises. Only one enterprise is located on a paved highway and six are located over ten miles from a paved highway. Distance to a paved road is perceived by operators as being either an advantage or a disadvantage.

All recreational enterprises have been operated by the present operator for less than fifteen years, although there is evidence that several former guest ranches operated for a much longer time in the area south of Calgary.

All recreational enterprises with the exception of one, are based on livestock farms or ranches, or on mixed grain and livestock farms. The exception is a children's camp based on a poultry farm.



Guest farms and ranches can be divided into two categories, those which cater to children only, and those which cater to children, families or adults. Horseback riding is the major recreational activity in the former category, while swimming is of secondary importance and usually takes place at a nearby lake or pool. The season for guests at children's farms and ranches is restricted to the summer vacation of July and August, but during that time occupancy rates are high on the three enterprises which have been established for a longer time. Although data sources are incomplete, and in some cases are only estimates, it would appear that these three enterprises have the greatest numbers of visitor days and hence the greatest gross revenue of all enterprises.

Enterprises catering to children, families or adults also feature horseback riding as a major attraction, but in addition the aesthetic resource is important as well as scenic, recreational and cultural attractions in the surrounding area. These enterprises may cater to local recreationists, but a substantial proportion of guests originate outside of the province and could be considered to be vacationists according to the definition given by Campbell (1966).

Capital investments in most cases consist mainly of acquiring and outfitting horses and of renovating existing farm buildings to make them suitable for accommodation. Capital investment in accommodation and



recreation facilities is with one notable exception much less than investment in the agricultural enterprise. Net returns from recreation and accommodation range from negative returns to about \$5,000.00. Revenue is derived mainly from the provision of accommodation and meals. In some cases revenue is also derived from rental of horses for trail riding. In several cases the personal satisfaction gained by meeting people is as important as economic benefits.

Two of the enterprises report income from recreation and accommodation as being the primary source of income and in several others it is a minor but important secondary source of income. For two operators the provision of recreation and accommodation was described as being a sideline or pilot project.

Advertising is an important factor in the number of guests attracted. Enterprises which do not advertise extensively report fewer guests. The Alberta Visitors Guide is the most affective means of advertising. Well-established enterprises rely heavily on word-of-mouth publicity and on return visits.

Availability of labour does not appear to be a problem; there are usually former guests, often older teenagers, for whom the satisfaction gained in working on a farm or ranch compensates for the low wages paid. The operator's family often provides sufficient labour to meet the needs of the enterprise.



Within the past two years the number of farms and ranches offering vacation holidays has more than doubled. As more farm operators, especially members of the Great West Farm Vacation Association attempt to develop recreation enterprises, patterns observed in this study may undergo considerable change.



## CHAPTER IV

### FARMERS' INTEREST

#### Introduction

That guest farms and ranches can be a satisfactory means of supplementing farm incomes in Alberta has been shown in the previous chapter. Much farm land is already being utilized for recreational use, as will become evident in this chapter, while much more is probably suited for such uses. In this situation the land owner as the manager of the recreational resource occupies a key role. Planning for recreational utilization of privately-owned farm lands will be futile without the interest and co-operation of the farmer. Moreover,

If governmental and private organizations are to promote an increase in the number of private recreation enterprises, these organizations must be able to identify the potential provider so that programs can be devised to meet his needs (McCurdy, 1965:99).

In this chapter the results of analysis of the questionnaire are presented. Estimates of the percentage of farmers interested in a number of types of recreational enterprise are stated and the results of hypotheses of association of interest with selected variables are presented. Reasons for interest or lack of it as indicated by the questionnaire returns are discussed. The patterns



of recreational use of farm land are analyzed as a basis for understanding recreational pressures on farm land.

#### Interest in Recreational Enterprises

The term "interest" is used here in the sense of "feeling of intentness, concern, or curiosity about something" (Webster's New World Dictionary, 1957 edition). Thus interest does not necessarily imply an intention to act, but merely an attitude of curiosity. Since the questionnaire was self-administered, one can expect that individual interpretations of the term might have deviated somewhat from the dictionary definition. Nevertheless, it was felt that the term was sufficiently straightforward to warrant its usage.

Measurement of interest was very simple, the respondent was given the option of placing a check-mark underneath the word "interested" or the words "not interested" beside each of five types of recreational activity which could form the basis for the establishment of a recreational enterprise.<sup>1</sup> This formed the basis for the calculation of percentages of responses in each of two categories, interest and non-interest. Non-response to

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<sup>1</sup>Of the many possible types of recreational enterprise suitable for development on farms which are mentioned in the literature, the five which were judged to be most suitable for development on Alberta farms were selected. Each type of facility is present in Alberta, although some, such as campsites are predominantly publicly owned. Three additional types of recreational enterprise were suggested by respondents, an animal farm, an air strip, and a fish pool.



this question was infrequent and the absence of a check-mark in either column was taken as an indication of a lack of interest and recorded accordingly. Percentages for interest and non-interest categories were calculated for each type of activity. In addition, the percentage of respondents indicating interest in one or more type of activity was calculated. This latter category was employed most frequently in cross-tabulation of interest with other variables. It must be recognized that this general interest designation encompasses interest in any combination of one or more type of activity.

#### Interest levels

Eighty-two of 202 respondents (40.6 per cent) indicated interest in one or more types of recreational enterprise. Of those indicating interest in one or more types of recreational enterprise, sixteen indicated interest in two types, sixteen in three, seventeen in four, and five indicated interest in all five types of enterprise.

The total number of respondents indicating interest in the commercial development of each of the five types of recreational activity listed is indicated in Table 13. Assuming that the sample is a valid probability sample and that questionnaire error is minimal, these percentages can be used as estimates of the proportion of interest among all Alberta farmers. A range of percentages within which the actual proportion for the total population would lie can



be obtained by calculation of confidence intervals.<sup>2</sup> Confidence limits for a 95 per cent level of confidence were calculated and were included in Table 13.

TABLE 13

## INTEREST IN DEVELOPMENT OF FIVE TYPES OF ACTIVITY

Type of Activity	Number Indicating Interest	Percentage of Total with 95 Per cent Confidence Interval
Snowmobiling	53	26.2 ± 6.1
Camping	46	22.8 ± 5.8
Horseback riding	42	20.8 ± 5.6
Vacationing	41	20.3 ± 5.5
Hunting	31	15.3 ± 5.0
Total number of respondents = 202		

Association of interest and other variables

As had been expected, interest in one or more activities and interest in each of the five activities showed considerable variation according to several other variables. The chi-square test was used to determine whether or not a statistically significant association could be shown to exist between interest in one or more activity and the variables for which information was

<sup>2</sup>The calculation of confidence intervals for an estimate of a proposition is discussed in Walpole (1968: 193-195). A brief resume is given in Appendix E.



available from the questionnaire returns.

In this section hypotheses of association are stated and explained. Interest and the appropriate contingency tables are included in the text to indicate the nature of the distributions. Associations between interest in each recreational activity and the selected variables will also be summarized.

In several cases certain observable trends suggested an association but the calculated chi-square value did not indicate this to be statistically significant. These will be mentioned, however, as examples of trends requiring further empirical verification.

a. The first hypothesis postulates an association between interest and the percentage of forested land on the respondents' farms. It has been suggested by Ironside (1971) and others that the presence of forested areas is an important aspect of an attractive landscape and thus contributes to the quality of the recreational resource. The land-owner's perception of a high-quality recreational resource may stimulate interest in its commercial development. Moreover, forested land has limited agricultural productivity and the farmer may be seeking profitable, alternative uses for his land. This hypothesis is supported by a study (Shelly, 1971) which found a significant association between the amount of idle land and the interest in the commercial development of recreation enterprises by rural land owners in Lane County, Oregon.



Results are presented in Table 14. Although a slight increase in interest with increasing percentages of forested land is observed, the trend is not sufficiently pronounced to be statistically significant.

TABLE 14  
INTEREST AND PERCENTAGE OF FORESTED LAND

	Percentage of Land Under Forest or Bush Cover			
	Under 10	11-30	Over 31	Totals
Interest	50 (39.2)	14 (41.2)	16 (49.0)	80 (40.8)
Non-interest	79 (61.2)	20 (58.8)	17 (51.5)	116 (59.2)
Totals	129	34	33	196

Figures in brackets are percentages of the column marginal totals.

Chi-square: 1.59, 2 degrees of freedom, not significant at .05 level.

Interest in this table and in subsequent tables means that an interest in one or more activity was indicated by the respondent.

A similar trend exists for interest and each of the five recreational activities but it is not marked enough to be statistically significant.

b. The second hypothesis postulates decreasing interest with an increase in the percentage of cultivated land. This is based on the assumption that cultivated land



would be much less suitable for recreational activity. Also, the danger of crops being trampled might result in the farmer's unwillingness to allow recreational activities on his property. Results of the cross-tabulation between interest and percentage of land under cultivation are presented in Table 15.

TABLE 15  
INTEREST AND PERCENTAGE OF LAND UNDER CULTIVATION

Percentage of Farmland Under Cultivation					
	0-19	20-49	50-79	80-100	Totals
Interest	13 (52.0)	16 (44.5)	25 (34.8)	26 (42.6)	80 (40.8)
Non-interest	12 (48.0)	20 (55.6)	49 (66.2)	35 (57.4)	116 (59.2)
Totals	25	36	74	61	196

Figures in brackets are percentages of the column marginal totals.

Chi-square: 5.92, 4 degrees of freedom, not significant at .05 level.

Operators of farms with low (under 20 per cent) percentage of land under crops show more interest (52.0 per cent) in developing one or more types of recreational enterprises than do operators of farms which have a high (over 80 per cent) percentage of land under crops (42.6 per cent). However, this difference is too slight to be



statistically significant. Thus the hypothesis of an association between the farmer's interest and the amount of land being cultivated on his farm is rejected.

Similarly there is no statistically significant association between interest in each of the five types of enterprise with percentage of cultivated land. However, a clear decrease of interest in a horseback riding enterprise with an increase in cultivated area is evident. Thirty-two per cent of operators of farms with a small (under 20 per cent) amount of cultivated land show interest in a horseback riding enterprise compared to only 16.4 per cent for operators of farms with over 80 per cent of the area under cultivation.

c. The third hypothesis states that interest will vary with the type of farm. This variation is related in part to the resource potential of the farm and thus to the first two hypotheses. Grain farms, having few or no animals and a high percentage of land under cultivation might hold little attraction for guests. The farmer's perception of this possibility might result in a lack of interest in the development of recreational enterprises. Moreover, farms producing specialized products might require considerable labour inputs which would leave the operator little time for developing recreational facilities.

The cross-tabulation of frequencies for farm type and interest in one or more types of recreational enterprise is presented in Table 16.



TABLE 16  
INTEREST AND FARM TYPE

	Livestock	Mixed, Grain-livestock	Grain	Miscellaneous*	Totals
Interest	12 (54.6)	51 (45.1)	13 (29.6)	6 (26.1)	82 (40.6)
Non-interest	10 (45.5)	62 (54.9)	31 (70.5)	17 (73.9)	120 (59.4)
Totals	22	113	44	23	202

\*Includes dairy, poultry, and irrigation farms.

Figures in brackets are percentages of the column marginal totals.

Chi-square: 6.98, 3 degrees of freedom, not significant at .05 level.

As expected, highest rates of interest are evident for operators of livestock and mixed farms while the interest among operators of grain farms and of miscellaneous farms is much lower. However, the chi-square test indicates that the association is not significant.

Association between farm type and interest in each of five types of recreational enterprise are similarly not statistically significant.

Table 17 summarizes percentages of respondents interested in each type of recreational enterprise by farm



type.

TABLE 17

INTEREST IN FIVE TYPES OF RECREATIONAL  
ENTERPRISE AND FARM TYPE

Type of Enterprise	Type of Farm				Total No. Indicating Interest
	Mixed	Livestock	Grain	Miscellaneous	
Snowmobiling	28.3*	40.9	20.5	13.0	53
Camping	24.8	22.7	25.0	8.7	46
Horseback riding	24.8	31.8	9.1	13.0	42
Vacationing	20.4	31.8	18.2	13.0	41
Hunting	16.8	22.7	13.6	4.3	31
No. of Farms	113	22	44	23	202

\*Percentages of the total number of farms in the sample.

d. The hypothesis was formulated that interest would vary with farm size, and that operators of smaller farms would indicate greater interest. This is based on the assumption that income is related positively to farm size,<sup>3</sup> and that the operator of a small farm has a greater

<sup>3</sup>This assumption is based on analysis of data in the 1966 Agricultural Census of Canada, giving the frequency distributions of commercial farms according to the value of products sold or gross income and the farm size. A two by two contingency table consisting of two columns containing frequencies of farms with high or low incomes, and two rows for frequencies of large and small farms was set up. Of the



need for supplemental income. His perception of this need will result in a greater interest in alternative income opportunities. Average farm size varies considerably throughout the province as a result of many factors, including soil productivity, proximity to urban areas and others. For this reason, farms were classified as being either small or large relative to the median farm size for that census division. Results of the cross-tabulation are presented in Table 18.

Contrary to expectation, interest is greater for operators of large farms, although the association between farmer interest and size of his farm is not statistically significant.

Interest in each of the five recreation enterprises is also greater for operators of large farms. (See Table 19.) The association of interest in a camping enterprise with farm size is significant at the .05 level with greater interest being shown by operators of large farms.

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high income farms (those above the median income class), 73.7 percent were large farms (those above the median size class), and 26.3 per cent were small (below the median size class). Of the low income farms (those below the median income class), 40.3 per cent were large and 56.7 per cent were small. A calculated chi-square value of 9.56 for 1 degree of freedom, significant at the .01 confidence level indicates that an association between income and farm size exists.



TABLE 18  
INTEREST IN RECREATIONAL ENTERPRISES AND FARM SIZE

	Size of Farm		Total
	Small	Large	
Interest	35 (33.7)	45 (47.9)	80 (40.4)
Non-interest	69 (66.2)	49 (52.1)	118 (59.6)
Total	104	94	198

Figures in brackets are percentages of the column marginal totals.

Chi-square: 3.28, 1 degree of freedom, not significant at .05 level.

TABLE 19  
INTEREST IN FIVE TYPES OF RECREATIONAL  
ENTERPRISE AND FARM SIZE

Type of Enterprise	Size of Farm		Total No. Indicating Interest
	Small	Large	
Snowmobiling	21.2	31.9	52
Camping	15.4	29.8	44*
Horseback riding	14.4	26.6	40
Vacationing	15.4	24.5	39
Hunting	10.6	20.2	30
No. of Farms	94	104	202

\*Significant at .05 level.



e. It was hypothesized that decreased accessibility to a paved road and increased distance to a major metropolitan area are associated with decreased interest. Perceived isolation from centres of recreation demand as well as lack of information of recreation marketing possibilities might affect interest negatively. Traffic flows of recreationists by a farmer living near the highway might arouse an interest in obtaining income by catering to their recreational wants.

Distance to a paved highway and highway distance from the respondent's post office to the closer of the two metropolitan areas in Alberta were the two measures used.

Cross-tabulation of interest against distance to the nearest paved road (Table 20), reveals that a decrease in percentage of respondents interested occurs with increasing distance. However, a low chi-square value indicates that the relationship is not statistically significant.

Cross-tabulation of interest with distance to the nearest metropolitan centre (Table 21), indicates no definite trend, although percentages of interest do vary in different distance zones. The low chi-square value leads to a rejection of the hypothesis that these are dependent variables.

Interest in vacationing, camping, and hunting enterprises shows no statistically significant association with distance to a paved road. In the case of interest in



TABLE 20  
INTEREST AND DISTANCE TO PAVED ROAD

	No. of Miles to Nearest Paved Road				
	0-2	3-5	6-10	Over 10	Total
Interest	32 (49.2)	22 (40.8)	14 (34.2)	13 (22.5)	81 (40.5)
Non-interest	33 (50.8)	32 (59.3)	27 (65.9)	27 (67.5)	119 (59.5)
Total	65	54	41	40	200

Firgues in brackets are percentages of the columns marginal totals.

Chi-square: 2.44, 3 degrees of freedom, not significant at .05 level.

TABLE 21  
INTEREST AND DISTANCE TO METROPOLITAN AREA

	Distance in Miles to Metropolitan Area								
	0-	25-	50-	75-	100-	150-	200	and over	Totals
Interest	6 (31.6)	11 (39.3)	17 (51.5)	13 (40.6)	18 (40.9)	7 (36.8)	10 (37.0)	82 (40.6)	
Non-interest	13 (68.4)	17 (60.7)	16 (48.5)	19 (59.4)	26 (59.1)	12 (63.2)	17 (60.3)	120 (59.4)	

Figures in brackets are percentages of the column marginal totals.

Chi-square: 2.55, 6 degrees of freedom, not significant at .05 level.



a vacationing enterprise a slight decrease in interest is observed.

Interest in horseback riding and snowmobiling enterprises shows a sufficient decline with increased distance to a paved road to be significant at a .1 level, admittedly a rather weak statistical association. In both cases about 30 per cent of operators living two miles or less from a paved road indicated interest as compared to 10 per cent of operators living over ten miles from a paved road.

No significant associations are found between distance to a metropolitan area and interest in each of the five types of enterprise. The only observable trend is that fewer operators of farms less than fifty miles from a metropolitan area show interest than those farther away.

f. It was expected that interest would vary regionally. This would reflect spatial patterns of the distribution of farm types, percentage of forested land, recreational potential, levels of farm income, and levels of recreation demand. As the farmer's attitude may be influenced by his perception of these factors which are spatially distributed, a spatial variation of interest will result.

The regional variation of interest is significant for planning, since the success of attempts to develop a programme to assist farmers in establishing recreational enterprises in a given region will depend largely on



whether or not interest in this type of development exists. If not, interest will have to be generated, or efforts at development will have to be focussed on areas where interest is higher.

The percentages of respondents indicating interest are indicated for each census division in Table 22 and appear to vary widely. However, this is rather misleading since the number of responses per census division is very small in some cases. In order to make more meaningful comparisons, and also to allow for the calculation of a valid chi-square value, results for C.D.'s 1 and 4, and 12, 13 and 14 were grouped.

TABLE 22  
INTEREST BY CENSUS DIVISION

Census Division	No. of Respondents Indicating Interest	No. of Respondents in Census Division	Percentage
14	2	2	100.0
3	6	11	54.5
10	9	19	49.4
8	10	22	45.5
13	8	19	42.1
5	7	17	41.2
1	2	5	40.0
12	2	5	40.0
2	7	18	38.9
7	6	16	37.5
11	9	24	37.5
15	8	22	36.4
4	2	7	28.6
6	4	15	26.7
Alberta	82	202	40.6



Results of the cross-tabulation are presented in Table 23, and the spatial variation in interest is indicated by Figure 8.

Interest ranges from a low of 26.7 per cent in C.D. 6 to a high of 54.5 per cent in C.D. 3, but the low chi-square value indicates that the association between area and interest is not statistically significant.

Interest in each type of recreational enterprise by census division is indicated in Table 24 and in Figure 9. The chi-square values reveal no significant associations between area and interest, however this involved a further grouping of the census divisions to increase expected values in each cell.

The effect of this would have been to obscure the differences evident in Table 24 and Figure 9. However, the following trends are apparent:

1. Interest in a snowmobiling enterprise is fairly evenly distributed with most interest being shown in the north-central areas (C.D.'s 10 and 11) and the south-west (C.D.'s 2 and 3).
2. Interest in a camping enterprise appears to be least in southern areas (C.D.'s 1, 3, 4, and 6).
3. Surprisingly, interest in a horseback riding enterprise is lowest in the most highly urbanized areas, Census Divisions 6 and 11. Perhaps this is due to the presence of several riding academies surrounding the cities of Edmonton and Calgary, against which farmers might feel



TABLE 23

INTEREST BY CENSUS DIVISION--CONTINGENCY TABLE

		Census Division						Totals			
		1+4	2	3	5	6	7	8	10	11	12+13+14
Interest	4 (36.4)	7 (38.9)	6 (54.5)	7 (41.2)	4 (26.7)	6 (43.8)	10 (45.5)	9 (47.4)	9 (37.5)	12 (46.2)	8 (36.4)
Non-interest	7 (64.6)	11 (61.1)	5 (44.5)	10 (58.8)	11 (73.3)	10 (56.2)	12 (54.5)	10 (52.6)	15 (62.5)	14 (53.8)	14 (63.6)
Totals	11	18	11	17	15	16	22	19	24	26	22
											202

Figures in brackets are the percentages of the column marginal totals.

Chi-square: 3.39, 10 degrees of freedom, not significant at .05 level.



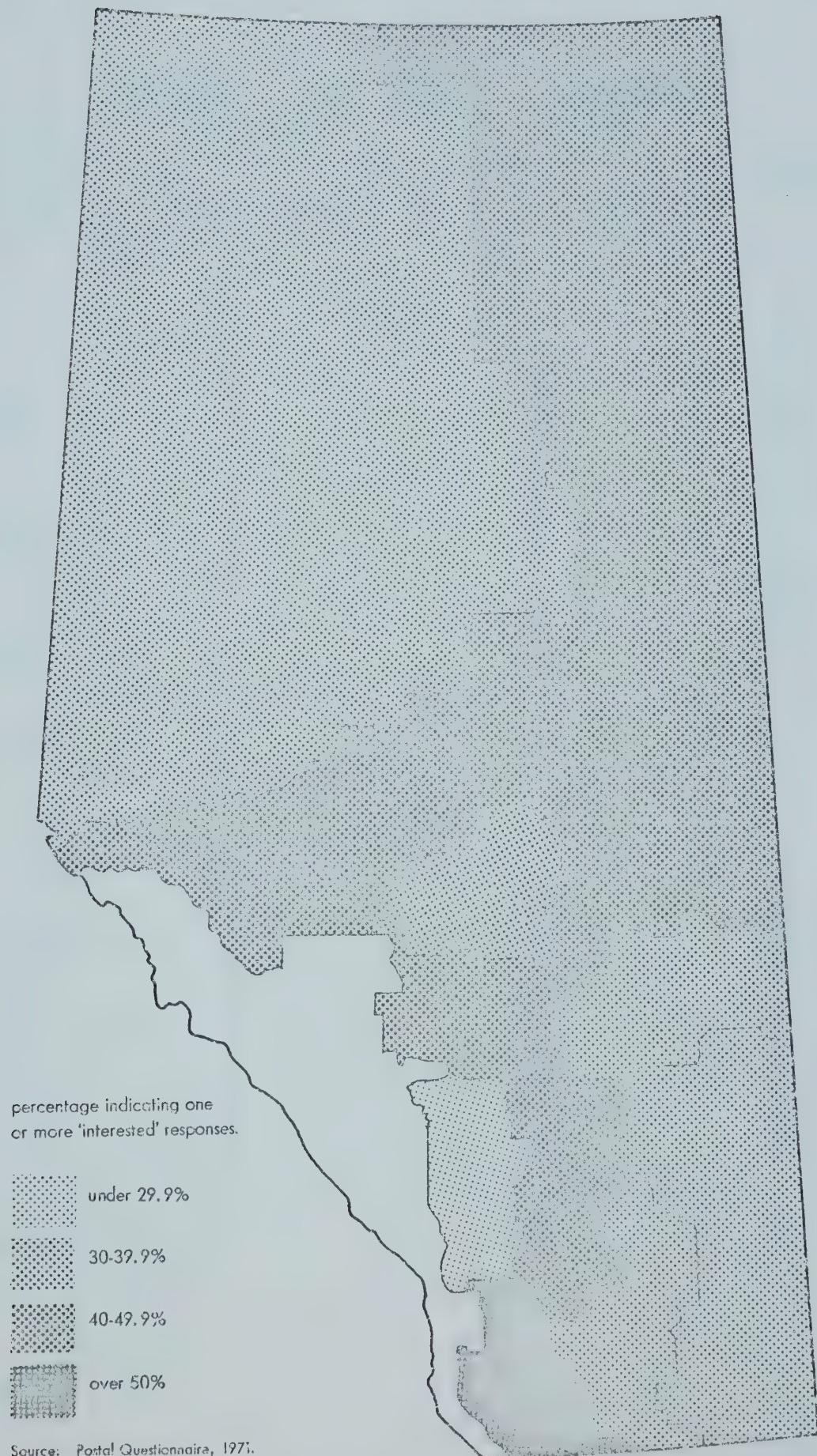


FIGURE 8



TABLE 24

INTEREST IN FIVE TYPES OF RECREATIONAL  
DEVELOPMENT BY CENSUS DIVISION

Census Division	No. of Respondents Indicating Interest	No. of Respondents in Census Division	Percentage
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Snowmobiling			
11	9	24	37.5
10	7	19	36.8
3	4	11	36.4
2	5	18	27.8
7	4	16	25.0
5	4	17	23.5
12,13,14	6	26	23.1
8	5	22	22.7
6	3	15	20.0
15	4	22	18.2
1,4	2	12	16.6

Alberta	53	202	26.2
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Camping			
7	5	16	31.3
15	6	22	27.3
12,13,14	6	26	26.9
10	5	19	26.3
5	4	17	23.5
8	5	22	22.7
2	4	18	22.2
11	5	24	20.8
3	2	11	18.2
6	2	15	13.3
1,4	1	12	8.4

Alberta	53	202	26.2
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TABLE 24--Continued

Census Division	No. of Respondents	No. of Respondents Indicating Interest in Census Division	Percentage
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Horseback Riding			
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12,13,14	7	26	30.8
8	6	22	27.3
1,4	3	12	25.0
5	4	17	23.5
15	5	22	22.7
2	4	18	22.2
10	4	19	21.1
7	3	16	18.8
3	2	11	18.2
6	2	15	13.3
11	2	24	8.3

Alberta	42	202	20.8
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Vacationing			
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10	7	19	36.8
12,13,14	8	26	30.8
8	6	22	27.3
7	4	16	25.0
5	4	17	23.5
6	3	15	20.0
15	4	14	18.2
11	3	24	12.5
3	1	11	9.1
1,4	1	12	8.3
2	0	18	0.0

Alberta	41	202	20.3
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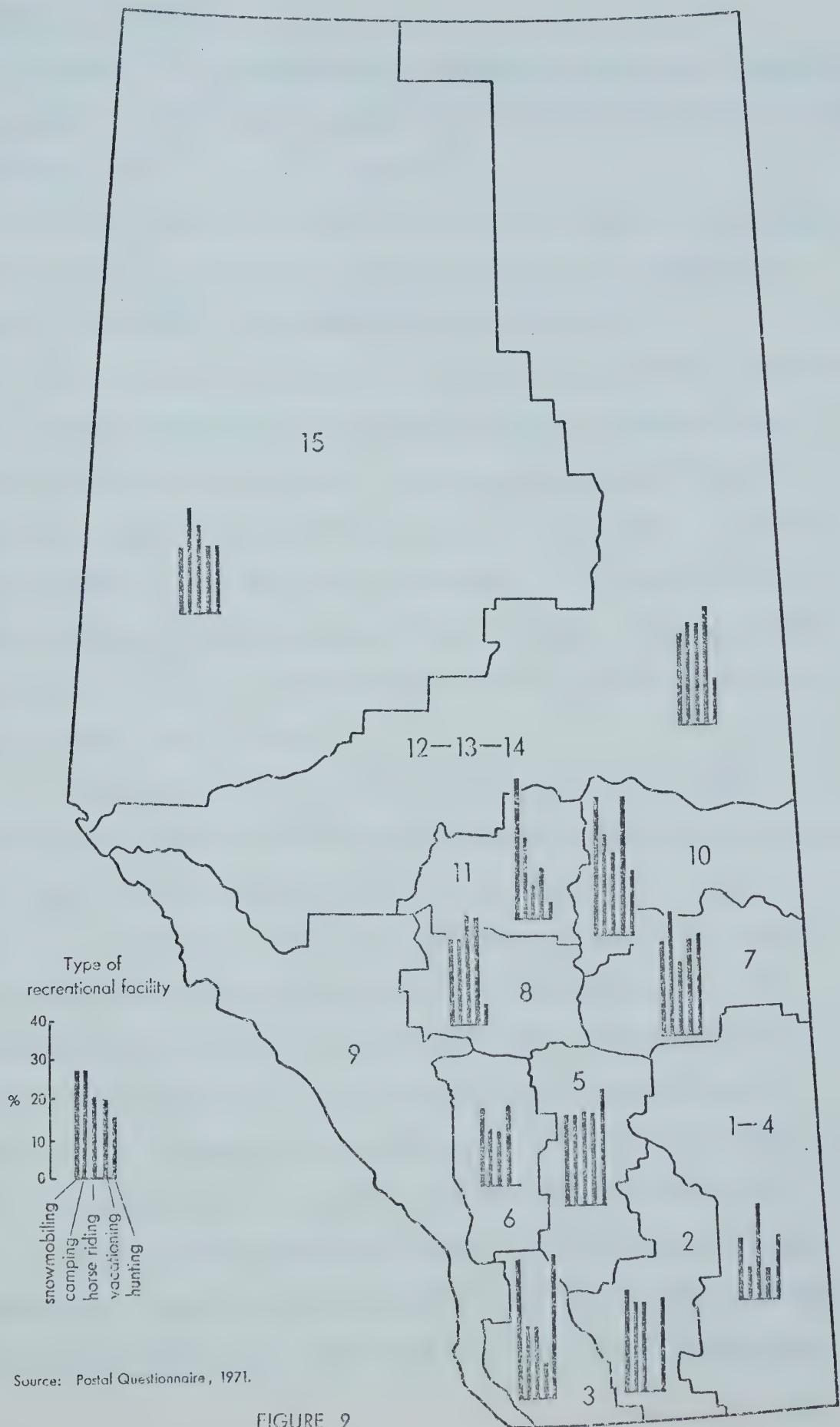
TABLE 24--Continued

Census Division	No. of Respondents Indicating Interest	No. of Respondents in Census Division	Percentage
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Hunting			
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3	4	11	36.4
5	5	17	29.5
7	4	16	25.0
2	4	18	22.2
15	4	22	18.2
1,4	2	12	16.6
10	3	19	15.8
12,13,14	3	26	11.7
8	1	22	4.5
11	1	24	4.2
6	0	15	0.0
Alberta	31	202	15.3







unable to compete.

4. Interest in a vacationing enterprise shows the greatest area range, with least interest in the southern part of the province (C.D.'s 1, 2, 3, and 4).

5. Interest in a hunting enterprise is very low in Census Divisions 6, 8, and 11, in which the urban centres of Calgary, Red Deer, and Edmonton are located.

g. A hypothesis of an association between interest and present recreational activity on respondents' farms was formulated and tested. The respondents were asked to indicate whether or not there was participation in each of eight types of recreational activity on the farm by people other than the members of the farm family. Responses were classified as to no recreational activity and one or more recreational activities.

The existence of recreational activity would indicate the suitability of the land for such activity and would serve as an indication of some demand for that activity. Moreover, present recreational activity might generate interest on the part of the land-owner in the commercial development of that activity. For example, three of the operators of existing enterprises stated that one of the main motivations for entering the business was to capitalize on existing recreational activities.

One hundred and forty-two (73.3 per cent of total) respondents reported recreational activity on their farms, while sixty (26.7 per cent) did not. Of those reporting



activity nearly half (69 out of 142, or 48.6 per cent) indicated interest while a much smaller proportion (13 out of 60, or 21.7 per cent) of those reporting no recreational activity were interested (see Table 25).

TABLE 25

INTEREST AND PRESENCE OF ONE OR MORE  
RECREATIONAL ACTIVITIES ON FARM

	No Recreational Activities	One or More Recreational Activities	Total
Interest	30 (21.7)	69 (48.6)	82 (40.6)
Non-Interest	47 (78.3)	73 (51.4)	120 (59.4)
Totals	60	142	202

Figures in brackets are percentages of the column marginal totals.

Chi-square: 11.5, 1 degree of freedom, significant at .001.

The calculated chi-square value indicates an association significant at a .001 level of confidence, that is, the probability of this distribution occurring by chance is less than .1 per cent. Interest is much greater for farmers whose land already supported some recreational use by persons other than the farm family. However, it must be emphasized that a slight majority (59.4 per cent) of respondents reporting some recreational activity did



not indicate interest in recreational development.

In the above analysis, various types of recreational activity and interest in the commercial development of several types of activity were dealt with, without differentiating these types. Further analysis is necessary to determine whether or not there is consistency between the presence of a specific recreational activity and interest in its commercial development. To test this hypothesis contingency tables were constructed for each of the five types of recreational development. An additional table was necessitated because two types of hunting were listed in the questionnaire. Results are presented in Table 26 and the following observations are based on it.

1. As observed previously, the fraction of persons interested in each type of enterprise is quite small, about one-fifth of the total. The percentage of persons reporting the presence of the recreational activity is likewise small, but has a wider range, from 7.4 per cent for camping to 47.5 per cent for bird hunting. In four cases the number reporting the activity was approximately the same as the number indicating interest while in the case of camping three times as many (forty-six) respondents indicated interest as reported the activity (fifteen). On the other hand, in the case of bird hunting, the number indicating interest in some type of hunting enterprise (thirty-one) is considerably lower than the number reporting bird hunting (ninety-six).



TABLE 26

ASSOCIATION OF INTEREST AND PRESENCE  
OF RECREATIONAL ACTIVITY

	No Activity	Activity	Totals
Snowmobiling			
Interest	23 (18.0)*	30 (40.5)	53 (26.2)
Non-interest	105 (82.0)	44 (59.5)	149 (73.8)
Totals	128	74	202

Chi-square: 11.21, 1 degree of freedom, significant at .01 level.

	Camping		
Interest	38 (20.3)	8 (53.3)	46 (22.8)
Non-interest	149 (79.7)	7 (46.7)	156 (77.2)
Totals	187	15	202

Chi-square: 6.83, 1 degree of freedom, significant at .01 level.

	Horseback Riding		
Interest	24 (14.6)	18 (47.4)	42 (20.8)
Non-interest	140 (85.4)	20 (52.6)	160 (79.2)
Totals	164	38	202

Chi-square: 18.2, 1 degree of freedom, significant at .001 level.

\*Figures in brackets in all cases are percentages of the column marginal totals.



TABLE 26--Continued

	No Activity	Activity	Totals
Bird Hunting			
Interest	5 ( 4.7) *	26 (27.1)	31 (15.2)
Non-interest	101 (95.3)	70 (72.9)	171 (84.7)
Totals	106	96	202
Chi-square: 17.71, 1 degree of freedom, significant at .001 level.			
Big Game Hunting			
Interest	23 (13.5)	8 (25.8)	31 (15.3)
Non-interest	148 (86.5)	23 (74.2)	171 (84.7)
Totals	171	31	202
Chi-square: 2.21, 1 degree of freedom, not significant.			
Vacationing			
Interest	29 (18.4)	12 (27.3)	41 (20.3)
Non-interest	129 (81.6)	32 (72.7)	161 (79.7)
Totals	158	44	202
Chi square: 1.19, 1 degree of freedom, not significant.			

\*Figures in brackets in all cases are percentages of the column marginal totals.



2. It is apparent that, with the exception of camping and horseback riding, a majority of respondents reporting the presence of the activity are not interested in its commercial development. On the other hand, with the exception of bird hunting and snowmobiling, the majority of respondents indicating interest did not report the activity as having taken place on their farm.

3. In all cases, however, the proportion of respondents who indicate interest is greater among those who report the recreational activity (ranging from 27.1 per cent to 53.5 per cent) than among those who do not (4.7 per cent to 20.3 per cent). In the case of bird hunting, horseback riding and snowmobiling the difference is sufficiently great to be statistically significant at the .001 level. For bird hunting and snowmobiling the actual numbers of interested respondents are also higher for those reporting the activity than those not reporting the activity.

4. In the case of camping the difference is sufficient to be significant at the .01 level, but the small number of persons reporting camping on the farm weakens the validity of the association. The difference in interest between the recreational farms and non-recreational farms is too slight to be significant in the case of the big-game hunting and vacationing.

In conclusion, there is a greater likelihood of a farmer being interested in any of five types of recreational



enterprise if the farm is already being used for any of eight types of recreational activity. Furthermore, he is more likely to be interested in a hunting, camping, snowmobiling, or horseback riding enterprise if his farm has been used for each of these activities, respectively.

#### Reasons for Interest

Respondents were asked to indicate the main reason for indicating interest in various types of farm-based recreational enterprises. Three likely reasons were suggested with the expectation that only one would be marked. In many cases, however, more than one reason was indicated. Space was provided for respondents to add additional reasons.

Of the eighty-two respondents who indicated interest in one or more suggested types of recreational enterprise, seventy specified a reason for their interest. Forty respondents indicated only one reason, twenty-seven indicated two, and six indicated all three reasons. Out of the seventy, fifty-two indicated that such enterprises "would be a needed source of income," thirty-one indicated that "it would be interesting to meet guests," and twenty-seven indicated that "there is a need for more recreational facilities."

A number of other reasons were given in the space provided and some comments were made on the listed reasons. Two respondents stressed the importance of communication



between urban and rural residents, which would help urban dwellers gain a better appreciation of the farmers' problems. One respondent suggested that "farmers should be willing to share the natural environment of their farm" with urban dwellers who "have only their back yard or an apartment." A similar sentiment was expressed by a farmer whose interest was motivated by the need for supplementary income and by a "desire to share the beautiful scenery with others."

Interest related to an awareness of the recreational potential of the farm was expressed by two farmers. One stated that the area surrounding a small lake on his property was more suitable for recreation than for agriculture. Apprehension was expressed at the trend towards destroying the recreational potential of similar sites by draining lakes and clearing land for agricultural development. The second stated that his land is adjacent to a small lake which would be suitable for boating.

In two other cases interest in further recreational development appears to be related to certain existing specialized activities. In the case of one farm, rodeo practice was mentioned as a present recreational activity and interest in charging for horseback riding was indicated--the farmer stating that he is a good trainer and loves horses. The second case, is that of a farmer who has an airstrip on his property and who expressed interest in the establishment of a flying and gliding club



on his farm.

#### Reasons for Non-Interest

Three likely reasons for not being interested in recreational development were listed and the respondent was asked to indicate the main reason. As with the previous question, space was provided for additional reasons. Although it was hoped that respondents would indicate only one of the three, many respondents marked two or all three suggested reasons. The three suggested reasons were that respondents "want to stick strictly to farming," "prefer privacy," and "don't want to be bothered with management" (see Appendix B). These are certainly subject to individual interpretation and are somewhat ambiguous. However, response to the open-ended question on additional reasons was greater than response to the equivalent question on reasons for interest.

A considerable amount of apprehension and even downright hostility towards trespassers, especially city people, was evident and the importance of privacy and quiet was emphasized. In several cases frustration with the unfavourable economic realities of farm life was expressed.

Of the 120 respondents indicating no interest in farm-based recreational enterprises, 58 indicated they would like to stick strictly to farming, the same number indicated a preference for privacy, while 47 indicated



they did not want to bother with management problems.

Obviously many respondents indicated more than one suggested reason.

The forty-eight responses to the open-ended question were placed in several additional categories. Thirteen respondents mentioned existing and potential conflicts with agricultural activities, a further thirteen mentioned age as a factor in non-interest, eight respondents mentioned a lack of recreational resources and lack of time was cited by seven respondents.

Some individual comments were made summarizing feelings about real or potential conflicts. A respondent living forty miles northwest of Calgary complained rather bitterly about intrusions by city dwellers for purposes of hunting and fishing, despite the posting of signs. A suggested solution would be to "make the streams private property." The disappearance of wildlife was attributed to the improvement of roads in the area and the growth of the city. The note ended with great emphasis being placed on the need for peace, quiet, and privacy.

Another respondent living thirty miles east of Calgary praised the "independence, freedom, slower pace and peaceful, quiet, natural environment" of farm life. An apology was made for implying unsociability on his part, but the irresponsible actions of city people who export the undesirable elements of city life, especially pollution, were to blame for this attitude, although he would welcome



those city dwellers who appreciate the peace and quiet of the countryside. Littering, crop damage, danger to livestock, and danger from fire were mentioned as other examples of conflicts between recreational and agricultural conflicts.

A few of the thirteen respondents who cited old age as a factor in non-interest agreed that the idea of farm-based recreational enterprises has considerable merit for their farm, but that retirement limits participation. For example, one eighty-year-old respondent favoured the idea of a camp for children from poor families, the location of his farm, four miles from a large lake being advantageous. Another respondent indicated that, although his property is suitable for a variety of recreational activities, old age and poor health are limiting factors. A respondent from the Peace River region cited his duck pond and his interest in wildlife preservation and taxidermy as being of possible interest to guests, but ill health combined with probable management problems would make any development schemes unfeasible. On the other hand, a farmer from the same area expressed interest but because he had just started farming he did not feel prepared to diversify into recreational enterprises. The eight respondents who mentioned lack of recreational resources as a factor limiting interest, are scattered throughout the province. For example, the opinion was expressed that farm-based recreational development in an irrigated area



between Medicine Hat and Lethbridge would be unfeasible because of summertime heat and aridity and consequent lack of tree cover.

#### Perception of Recreational Attraction of Farm

An attempt was made to amplify the reasons for interest in a vacationing enterprise by asking whether or not respondents felt that their farm could attract paying guests. It was assumed that an affirmative reply would indicate an awareness of the recreational and aesthetic resources of farm life as well as a knowledge of a demand for farm vacations.

Of 202 respondents, 45 (22.3 per cent) replied positively to this question, 75 (37.1 per cent) replied negatively, 76 (37.6 per cent) were uncertain, and 6 (3.0 per cent) did not reply. Thus, only a small fraction of farmers feel that guests could be attracted to their farm.

Respondents answering positively are disproportionately distributed with regard to type of farm in that positive responses are much higher for operators of livestock farms or ranches (ten out of twenty-two, or 45.5 per cent) than for operators of grain farms (four out of forty-four, or 9.1 per cent). In fact, the association of farm type and awareness of the farm's attractiveness is significant at a .02 level.

Of the forty-one persons who had previously indicated interest in a vacationing enterprise, nineteen



answered this question positively, seventeen were uncertain, four replied negatively and three did not reply at all. Apparently, interest in development of vacationing enterprise does not necessarily imply complete certainty on the part of the farmer that guests would find the farm an attractive place to visit.

#### Access Fees for Hunters

The question was asked whether or not respondents were in favour of hunters paying for access to farm and ranch lands. It has been suggested that this is one way in which conflicts between the landowner and hunter could be resolved. The question was an open-ended one and many respondents gave vague replies or stated that they did not know. Out of 202 respondents, 43 (21.3 per cent) gave a definite positive reply, 118 (58.4 per cent) were not in favour, 32 (15.8 per cent) gave rather vague replies and 9 (4.5 per cent) did not answer.

Several attitudes towards paying hunters were inferred from comments made in replying to the question. A number of respondents gave negative replies to the question because they are opposed to hunters on their property, whether they pay or not, mainly because of real or possible damage to livestock and crops. Some of these expressed outright hostility towards hunters with remarks like, "would like to eliminate them" "they're predatory," and "shoot the hunters." Two others cited examples of loss



of livestock due to hunters' carelessness. Others opposed hunting on their property because of a desire to protect wildlife.

Another attitude expressed is that wildlife resources should be accessible to all, whether rich or poor; thus paying for hunting privileges violates basic egalitarian principles of our society. In the words of one respondent, for hunters to pay "is a crime in itself as it leads to hunting by a select number and/or class of people who reap the benefits of such a resource." This type of person might welcome hunters, as some stated they would, but would not wish to charge.

A contrasting attitude is that the right to charge access fees could be used as a management tool for controlling hunters in addition to being a source of income. To quote a respondent, one "can't keep them [hunters] off, so why not charge them." Two other respondents echoed these sentiments.

Several respondents' negative replies to the question were due to the lack of game on their property. Four respondents cited the scarcity of game as the reason for negative response, and it is possible that this was true in other cases, since only 98 out of 202 respondents reported hunting on their land by persons other than the farm family.

Essentially the question is the same as the previous question on interest in some type of hunting enterprise



(see Appendix B) and was therefore used as a check on consistency of response. Comparison between responses to both questions shows that thirty-one farmers replied positively to the first question of whom only seventeen also replied positively to the second. A further twenty-six replied negatively to the second question but positively to the first. This inconsistency suggests either that the questions were poorly worded or that respondents were careless in answering. It is possible that respondents interpreted the first question as referring to shooting preserves as well, in which case it must be concluded that the questionnaire was faulty in not stating the different possibilities for obtaining income from hunters.

#### Present Recreational Activity on Farms

Given that farmers are more likely to be interested in development of recreational enterprises if some recreational activity already exists on the farm, it is worthwhile to examine the patterns of recreational activity. This will not amplify the conclusions reached in the previous sections; however, the use of farmland for recreational activity can be considered as a very general indication of recreational demand for that activity. It is only a very general indication, as only the presence or absence of the recreational activity was measured and no information as to the number of participants, the length of time spent or the price the recreationist paid in terms



of travel costs was obtained. It can be argued that recreational enterprises would be most successful in areas which already have some activity of that type. The fact that no specific time period in which participation might have taken place would have rendered the question subject to a variety of interpretations on the part of the respondent.

The number and percentage of respondents indicating the presence of each of the eight listed recreational activities on their farms is summarized in Table 27. Hunting of game birds was the most frequently mentioned activity, with snowmobiling, a winter activity being the second most frequently mentioned. The two water-based activities, fishing and swimming were mentioned in a relatively low number of cases. Space was provided for the respondents to list other recreational activities occurring on the farm. Response to this was rather low; rock-collecting and skiing were mentioned twice, while picnicking, trapshooting, flying, rodeo practice, nature study, square dancing, and trapping were mentioned once. In addition, one farmer mentioned his antique auto collection as a possible tourist attraction.

The same method of analysis for determining patterns of the distribution of recreational activity as was used in the previous section was used. A number of contingency tables were constructed to test for an association between each of the previously used variables and the presence of



one or more of the recreational activities as well as the presence of each of the eight recreational activities. Because this section is less central to the study, less information is presented in tabular form. The results of the cross-tabulations are presented in Table 28 and the nature of significant associations are discussed in the following paragraphs.

TABLE 27  
PARTICIPATION IN RECREATION ACTIVITIES  
BY OFF-FARM RESIDENTS

Type of Activity	No. of Respondents Reporting Activity	Percentage of Total
Hunting--ducks, geese, and upland game birds	96	47.5
Snowmobiling	74	36.6
Vacationing	44	21.8
Horseback riding	38	18.8
Hunting--big game	31	15.3
Fishing	24	11.9
Swimming	23	11.4
Camping	15	7.4

The total number of respondents is 202.



TABLE 28

## ASSOCIATIONS BETWEEN RECREATIONAL ACTIVITIES AND SELECTED VARIABLES

	Variables						
	Farm Type	Cultivated Acreage	Forested Acreage	Farm Size	Census Division	Distance to Paved Road	Distance to Metropolitan Area
One or more activities	.01	.05	N.S.*	N.S.	.05	N.S.	N.S.
Bird hunting	N.S.	.01	.02	.05	.001	N.S.	N.S.
Snowmobiling	.01	.01	N.S.	N.S.	N.S.	N.S.	N.S.
Vacationing	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Horseback riding	N.S.	N.S.	N.S.	.05	N.S.	N.S.	N.S.
Big game hunting	.02	N.S.	.05	.01	N.S.	N.S.	N.S.
Fishing	N.S.	N.S.	N.S.	.01	N.S.	N.S.	N.S.
Swimming	.05	.02	.01	N.S.	N.S.	N.S.	N.S.
Camping	N.S.	N.S.	.01	N.S.	N.S.	N.S.	N.S.

\*N.S. = No significant association.



Associations between farm types, land use, farm size, and census divisions and participation in one or more of the recreational activities exists. No significant associations with accessibility as measured by distance to pavement and to a metropolitan area are evident. Where cross-tabulations have been constructed for the presence or absence of one or more recreational activities, a strong (.01) association occurs with farm type, with the highest rate of participation occurring for livestock farms, or ranches (90.9 per cent) and the lowest rate for the miscellaneous category, including dairy, poultry, and irrigated farms (52.2 per cent). A weak (.05) association occurs with cultivated acreage but no significant association with the percentage of forested land exists. Farms with either more than 79 per cent or less than 20 per cent of land under cultivation have highest rates of participation. There is a gradual decrease in participation from the southern to the northern parts of the province, significant at the .05 level, with a rate of 100.0 per cent in C.D.'s 1 and 4 combined, in the south; compared to 50.0 per cent in C.D. 15 in the north (see Table 29). Large farms (larger than median size for the census division) have slightly higher rates of participation (75.5 per cent) than small farms (68.3 per cent) but this difference is not statistically significant.



TABLE 29

## FARM RECREATION ACTIVITY BY CENSUS DIVISION

Census Division	One or More Recreational Activities		
	No. Reporting Participation	No. in Census Division	Percentage
1,4	12	12	100.0
7	14	16	87.3
2	15	18	83.3
3	9	11	81.6
8	18	22	81.8
10	13	19	68.4
11	16	24	66.7
5	11	17	64.7
12,13,14	15	26	57.6
6	8	15	53.3
15	11	22	50.0
Alberta	142	202	70.3

Significant at .05 level.

Associations of farm type, land use, farm size, and census division with each type of recreational activity are as follows:

Farm Type.--Significant associations are found between farm type and snowmobiling (.01 level), big-game hunting (.02 level) and swimming (.05 level). In each case



highest levels of participation are found on livestock farms (ranches), the second highest on mixed farms, the third highest on grain farms and the lowest on miscellaneous (dairy, poultry, and irrigation) farms. Similar distributions occur for other activities with the exception of bird hunting, but these are not statistically significant. Highest levels of participation in bird hunting occur for mixed farms and grain farms.

Land use.--Significant association occur between cultivated acreage and snowmobiling (.01 level), bird hunting (.01 level) and swimming (.02 level). Snowmobiling shows the lowest level of participation on farms which have 50 to 79 per cent of land under cultivation while bird hunting is most prevalent on farms which are more than 79 per cent cultivated. On the other hand, participation in swimming occurs most frequently on farms which have less than 20 per cent of land under cultivation and decreases with increased percentage of cultivated land. Perhaps this reflects an association of water bodies with the presence of uncultivated land. For all other activities, with the exception of vacationing, a similar trend is discernible, although it is not significant.

Of the five activities which are significantly associated with the amount of forested land, bird hunting is most prevalent in areas of little (under 10 per cent) forest cover, vacationing, camping, and swimming in areas



of greatest (over 31 per cent) forest cover, and big game hunting on farms with an intermediate (11 to 30 per cent) amount of forest cover. Some of these relationships are to be expected since in some cases the percentage of forest cover and of cultivated area are reciprocal.

Farm size.--Strong (.01 level) associations exist between farm size and participation in big game hunting and fishing, while farm size is weakly (.05 level) associated with participation in bird hunting and horse-back riding. In these cases as well as all others except vacationing, where no trend is discernible, participation is higher for large farms than for small farms.

Census division.--The association between area and recreational activity is statistically significant only in the case of bird hunting where it is very strong (.001 level). Bird hunting was mentioned in a high (75 per cent and over) percentage of responses in eastern and southern areas (C.D.'s 1 and 4; 2 and 7), while a low (under 40 per cent) percentage of response was evident in central and northern areas (C.D.'s 6, 8, 11, 12 to 14). This is partly related to the spatial distribution of productive bird habitat and to the staging and migrational patterns of waterfowl. No other statistically significant association occurs, although from Table 30 it is evident that horseback riding is more prevalent in the southern part of the province.



TABLE 30

DISTRIBUTION OF RECREATION ACTIVITIES  
BY CENSUS DIVISIONS

Census Divisions	No. of Respondents Indicating Participation	No. of Respondents in Census Division	Percentage
Hunting--Ducks, Geese, and Upland Birds			
1,4	11	12	91.7
2	15	18	83.3
7	12	16	75.0
5	10	17	58.8
3	6	11	54.5
10	10	19	52.6
15	9	22	40.9
12,13,14	8	26	30.7
11	7	24	29.2
8	5	22	22.7
6	3	15	20.0
Alberta	96	202	47.5
Snowmobiling			
1,4	6	12	50.0
8	11	22	50.0
11	12	24	50.0
3	5	11	45.5
5	7	17	41.2
6	6	15	40.0
7	5	16	31.3
15	6	22	27.3
2	5	18	27.8
12,13,14	7	26	26.9
10	4	19	21.1
Alberta	74	202	36.6



TABLE 30--Continued

Census Divisions	No. of Respondents Indicating Participation	No. of Respondents in Census Division	Percentage
Vacationing			
10	6	19	31.6
8	6	22	27.3
1,4	3	12	25.0
12,13,14	6	26	23.1
11	5	24	20.8
7	3	16	18.8
3	2	11	18.2
5	3	17	17.6
6	2	15	13.3
2	2	18	11.1
Alberta	44	202	21.8
Horseback Riding			
3	5	11	45.5
1,4	5	12	41.7
2	5	18	27.8
6	3	15	20.0
7	3	16	18.8
8	4	22	18.2
5	3	17	17.6
10	3	19	15.8
12,13,14	4	26	15.4
11	3	24	12.5
15	0	22	0.0
Alberta	38	202	18.8



TABLE 30--Continued

Census Divisions	No. of Respondents Indicating Participation	No. of Respondents in Census Division	Percentage
Hunting--Big Game			
3	4	11	36.4
7	5	13	31.3
12,13,14	4	26	23.1
5	3	17	17.6
1,4	2	12	16.7
8	3	22	13.6
6	2	15	13.3
2	2	18	11.1
10	2	19	10.5
15	2	22	9.1
11	2	24	8.3
Alberta	/ 31	202	15.3
Fishing			
6	3	15	20.0
3	2	11	18.2
8	4	22	18.2
2	3	18	16.7
12,13,14	4	26	15.4
7	2	16	12.5
5	2	17	11.8
15	2	22	9.1
1,4	1	12	8.4
10	1	19	5.3
11	0	24	0.0
Alberta	24	202	11.9



TABLE 30--Continued

Census Divisions	No. of Respondents Indicating Participation	No. of Respondents in Census Division	Percentage
Swimming			
3	3	11	27.3
1, 4	3	12	25.0
12, 13, 14	6	26	23.1
15	3	22	13.6
8	2	22	9.1
6	1	15	6.7
5	1	17	5.9
2	1	18	5.6
10	1	19	5.3
11	1	24	4.2
7	0	16	0.0
Alberta	23	202	11.4
Camping			
15	4	22	18.2
12, 13, 14	4	26	15.4
7	2	16	12.5
4	1	11	9.1
6	1	15	6.7
10	1	19	5.3
8	1	22	4.5
1, 4	0	12	0.0
2	0	18	0.0
11	0	24	0.0
Alberta	15	202	7.4



Summary

Approximately 40 per cent of respondents indicated interest in charging fees for one or more of five types of recreational activity. Interest in development of each type of activity ranges from about 15 per cent of respondents interested in development of a hunting enterprise to 26 per cent interested in development of a snowmobiling enterprise.

A number of hypotheses of association between the aggregated measure, that is, respondents' interest in one or more types of recreational development and selected characteristics of their farms were tested using the chi-square test. The only significant association which was found to exist was between interest and participation in one or more recreational activities by persons other than the farm family. However, the data for some of the associations suggests certain trends which might tend to support the hypotheses of association but are not sufficiently marked to be statistically significant.

It appears that interest is slightly higher among respondents whose farms have greater forest cover and less cultivated land. Interest is greatest among operators of livestock farms or ranches, and lowest among operators of grain and various types of specialized farms. More operators of large farms indicated interest than did operators of small farms while interest declines with increasing distance to a paved road and is lowest near a



metropolitan area. There is no significant variation in interest between census divisions but interest is lowest in C.D. 6 in which Calgary is located, and highest in C.D. 3 in the southwest corner of the province.

The distribution of interest in each type of recreational development is in most cases similar to that for the aggregated measure, interest in one or more types of development. Interest in a camping enterprise is significantly higher among operators of large farms and interest in a hunting, camping, snowmobiling or horseback riding enterprise is significantly greater among operators of farms where persons other than members of the farm family already participate in the particular activity.

The need for increased income was the reason most frequently given for interest. Non-interest is related to lack of time, age, potential conflicts with agriculture, desire for privacy and disinclination to diversify. About one-fifth of the respondents feel that their farm is sufficiently interesting to attract paying guests.

A majority of farmers are opposed to the idea of obtaining income by charging access fees to hunters. Conflicts between landowners and hunters are quite acute judging from some of the replies to the questionnaires, but only a few respondents feel that charging access fees would be a useful control measure.

An effort was made to determine present patterns of recreational activity on farms, using a similar method



of analysis as that used in analysing interest. Hunting of ducks, geese, and upland game birds is the most prevalent activity, followed by snowmobiling and vacationing.

Significant associations exist between the presence of one or more recreational activity and farm type, cultivated acreage, and census division.

Recreational activity is more prevalent on livestock farms or ranches than on grain farms or other specialized types of farms. A significantly greater percentage of large farms as well as farms having either a small or a large percentage of cultivated land support recreational activity. A general decrease in on-farm recreational activity occurs from the southern to the northern part of the province, an exception being Census Division 6, the Calgary area.

These patterns may well reflect the pattern of the distribution of the most common types of recreational activity, namely bird hunting and snowmobiling. Further analysis shows that no significant associations exist between distance to paved road and distance to metropolitan area and the presence of each type of recreational activity, but numerous other significant associations exist.



## CHAPTER V

### CONCLUSIONS

#### Existing Guest Farms and Ranches

In this study information was obtained from eleven guest farms and ranches which showed that recreation and accommodation can be an important primary or secondary source of income for operators of farms and ranches. The general characteristics of guest farms and ranches were described. It is apparent that, in addition to providing accommodation for tourists or vacationists, one land-based and farm-based recreational activity, namely horseback riding, is important in all enterprises. The guest farm or guest ranch is a unique type of recreational enterprise featuring farm life and its working activities as a recreational and aesthetic attraction in its own right, as well as incorporating features of a children's summer camp, or a riding academy.

The success or failure of the individual enterprises can be attributed to its location, length of time of operation, advertising, initiative, interest and ingenuity of the operator in converting farm structures into suitable accommodation facilities, or to a combination of these factors. The significance of each of these factors is difficult to assess due to the small number of enterprises



and lack of reliability in the data.

The role of location in determining the success of an enterprise is difficult to ascertain. For example, the enterprises reporting little or no gross revenue due to a lack of guests are located in relatively remote locations with respect to urban centres and major highways. However the lack of success may also be due to the fact that operators have not availed themselves of methods of advertising which were shown to be successful for older enterprises, or to recent entry into the business.

Data from three enterprises suggests that over half of the guests at family-type guest farms and ranches originate outside the province. A location at least moderately accessible to main flows of tourist traffic would therefore be advantageous. For example, many members of the Great West Farm Vacation Association who live a few miles west of the major highway between Edmonton and Calgary near several large lakes should have a distinct locational advantage in attracting guests. Further research on the G.W.F.V.A. over the next few years should indicate whether or not this will happen.

#### Implications for Rural Development

By providing additional income a guest farm or ranch provides added financial security for the operator and his family. Returns to the operator have been shown to be relatively low, but in most cases capital investment



was shown to be quite low also, given that existing farm structures can readily be renovated. The role of the guest farm or ranch in providing local employment is negligible, as work is seasonal and wages low. Labor needs are met often by the operator's family or alternatively, labour is imported from outside the province. Since meals and accommodation are purchased by guests at the guest farm or ranch, economic benefits to the community would be minimal, although revenue received from guests may well be spent within the community by the operator.

There has been an obvious need for programmes of governmental assistance in providing technical advice, research and financial support. The provincial government of Alberta is already involved in publicity efforts and has recently commenced such a programme.

#### Implications for Recreational Planning

The role of guest farms and ranches in supplying recreation space and facilities when viewed in the context of all recreational facilities in the province, both public and private, is minor. They appear to contribute little to other recreational needs of local families other than horseback riding, although further information is needed to verify this assertion. Rather they appear to be oriented to supplying recreational requirements of people on weekend and vacation trips as well as functioning as summer camps for children.



A farm or guest ranch could well incorporate other recreational facilities to cater to local recreationists. For example, the highest interest by respondents to the postal questionnaire was shown in snowmobiling enterprises. The growing demand for this land-extensive activity could well be met by farmers and ranchers to the mutual benefit of both.

#### Farmers' Interest

One thousand and forty questionnaires were sent to a selective sample of Alberta farmers in an attempt to determine interest levels in the idea of developing recreational enterprises on their property. The results indicate about forty per cent of Alberta farmers are interested in the development of one or more types of recreational enterprise and that interest is not significantly distributed between different census divisions. However, results must be interpreted in the light of certain methodological limitations.

#### Evaluation of Method

Under perfect sampling conditions, the number of farmers interested in recreational development could be inferred from the results of the postal questionnaire. However, several shortcomings in the methodology should be considered.

First of all, the sample size was smaller than that recommended by a table of sample sizes, which would have



the effect of decreasing the reliability of estimates.

Even though the required size was approached for the province, small sample size for each geographical unit, the census division, allowed only the broadest of generalizations to be made.

Secondly, although tests for non-responses bias were made and analyses proceeded on the assumption that non-responses were insignificant, there was a noticeable decrease in interest between the first and second mailings. That this decrease was not found to be statistically significant does not eliminate the possibility that a further decrease in interest would have become evident if more complete sampling of initial non-respondents had been undertaken. Also, the fact that a small sample of initial non-respondents was used in the calculation of the difference of proportions test lessens the effectiveness of the test. Thus the possibility remains that the sample was biased due to non-responses and that had more persons responded, interest levels might have been considerably lower.

A third consideration may be the design of the questionnaire. Some inconsistencies in response have already been noted in the previous chapter.

Despite all these factors, it is still quite likely that a substantial percentage of Alberta farmers are interested in the development of a recreational enterprise of one form or another. However, as previously



noted, interest need not necessarily mean a disposition to act. A more sophisticated approach to attitude research would have amplified the attitude of interest. Personal interviews in a smaller area might have been more appropriate.

The questionnaire was administered at a certain point in time without any effort being made to stimulate interest. It is likely that the farmers' attitudes will change with time and increasing awareness of the potential for recreational development.

#### Significance of Findings

The attempts to relate interest to a number of geographical variables were rather inconclusive. The finding that the spatial distribution of interest in the province does not vary significantly between census divisions should provide some justification for conducting similar studies at a smaller scale and extrapolating the findings to a larger scale. However, the scale of this survey might well tend to obscure local differences.

The only significant relationship discovered was between interest and the presence of recreational activity. But the question arises, what is the significance of the presence of recreational activity? This could perhaps indicate that the land is suitable for such activity but it is also possible that land having high recreational potential might not be utilized due to lack of local demand



for that activity.

The finding that no other significant association between interest and any of the selected variables exists suggest that interest is related significantly to socio-economic variables such as age, income or education which were not determined by the questionnaire. Further research is needed to determine the significance of these associations.

Other observations which are interesting and suggestive but not statistically significant can be considered in the discussion of the implications for rural development. A main emphasis in studies of farm-based recreational enterprises is that they could help solve the problems of farm income.

The finding that interest is higher among operators of large farms, coupled with a suggested association of large farm size and higher incomes suggests that the farmer who is in need of increased income is less disposed to be interested in alternative sources of income. In addition, the apparent decrease of interest with increasing distance to a paved road indicates that farmers in more remote areas who are marginal in a spatial sense at least and might benefit most from supplementary or alternative income sources, are not as interested in these sources of income.

Moreover, the data suggests that interest is lower near large metropolitan areas, the very areas which are subject to greatest demands for recreational space and



facilities. It may be that lower interest here is due to landowners' experience of conflict with city dwellers trespassing on their land, and thus, proximity to an urban area may be a causal factor in lack of interest. It might also be that retaining land for speculative purposes might be a much more financially rewarding proposition than developing recreation facilities.

The trend for farmers to obtain supplementary incomes by charging for recreation and accommodation facilities has received little research attention in Canada. As the trend continues there will be ample scope for further research to be undertaken.



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APPENDIX A

CHECK LIST OF INFORMATION--GUEST FARMS AND RANCHES



## Questionnaire - Operators of Guest Farms, Ranches

## 1. History:

- a) length of time operating -farm
  - recreational enterprise

- b) reasons for going into the recreation business:

- c) previous occupation;

## 2. Farm:

- a) size

- b) tenure arrangements and ownership

- c) land use:
  - crops and summerfallow
  - improved pasture
  - unimproved pasture
  - bush or forest

- d) animals
  - horses
  - cows, dairy and beef
  - sheep
  - hogs and poultry

- e) water bodies on the farm

- f) buildings, house, storeys and size
  - barns, sheds,

- g) utilities, in house
  - in extra accommodation

## 3. Guests:

- a) any specific age patterns

- b) accommodation capacity of house,
  - of cabins,

- c) occupancy rates

- d) visitor days, if possible, or number of visitors over the summer

- e) origins of visitors, if possible

- f) activities, on-farm,
  - off-farm,

- g) repeat visits



4. Publicity and advertising:

- a) Alberta Accommodation Guide, Farm and Ranch Vacations, brochures, newspapers, etc.,
- b) success levels of various forms of advertising

5. Management factors; i.e., labor,  
insurance  
horses  
any special problems

6. Economic:

- a) total value, buildings, machinery, stock: \_\_\_\_\_  
under 10,000, 10-20, 20-30, 30-40, 40-50, 50-75, 75-100, 100 and over

OR      total value of recreational investment: \_\_\_\_\_  
under 1000, 1-25, 25-50, 50-1000, 10000-

b) annual income, last operating season:  
gross: farm: \_\_\_\_\_ or under 25, 25-50, 5000-10000, 10-20, 20-30,  
30-40, 40-50, 50-and over

net:      farm: \_\_\_\_\_ or, under 500, 500-1000, 1000-2500, 25-5000,  
5-10, over 10000

c) recreation; income, last operating year:  
gross: \_\_\_\_\_ or, under 500, 500-1000, 1000-2500, 2500-5000, over 5000

net: \_\_\_\_\_ or, under 250, 250-1000, 1000-2500, 2500-and over

d) percentage recreation of total income, if possible \_\_\_\_\_

e) most significant costs for recreational enterprise:

f) was credit for recreation enterprise needed?

7. Plans for the future?

8. General comments on the viability of the recreational enterprise

9. Rate structure, how is it determined?

10. Competition factors



APPENDIX B  
POSTAL QUESTIONNAIRE AND COVERING LETTER



## Postal Questionnaire

Dept. of Geography  
University of Alberta  
Edmonton, Alberta

## STRICTLY CONFIDENTIAL

Dear sir or madam:

I am a graduate student at the University of Alberta and am working on a master's thesis in the Department of Geography. The purpose of my research is to determine what farmers' attitudes are towards the idea of receiving additional income by developing various forms of recreational facilities on their farms. Questionnaires are being sent to a sample of one thousand Alberta farmers.

Your cooperation in completing and returning the enclosed questionnaire within ten days, if possible, will be appreciated. Any other comments will also be welcome. A self-addressed stamped envelope is enclosed for your convenience.

The information on your completed questionnaires will be kept in confidence: no one will have access to the questionnaires but myself and my supervisor, Dr. R.G. Ironside. No individual farmer will be identifiable in the analysis.

The results of the survey will be used in the preparation of my master's thesis, and may be of interest to farm organizations, government agencies, and to farmers themselves.

Thank you for your help.

Yours truly,

David H. Klippenstein

Department of Geography  
University of Alberta  
Edmonton, Alberta



A. The Farm:

1. What type of farm do you have? (Check the best description) Number of animals
- |                          |       |       |
|--------------------------|-------|-------|
| Grain                    | _____ | _____ |
| Livestock (except dairy) | _____ | _____ |
| Dairy                    | _____ | _____ |
| Mixed (grain-livestock)  | _____ | _____ |
| Poultry                  | _____ | _____ |
| Other (specify) _____    | _____ | _____ |
2. How large a farm or ranch are you operating this year? \_\_\_\_\_ acres  
 How many acres are cultivated (crops and summerfallow)? \_\_\_\_\_ acres  
 How many acres are in improved pasture? \_\_\_\_\_ acres  
 How many acres are in rough pasture, but not bush or forest? \_\_\_\_\_ acres  
 How many acres are forested or bush? \_\_\_\_\_ acres
3. How far is your farm from the nearest paved highway? \_\_\_\_\_ miles

B. Recreation:

1. Does anybody besides your immediate family participate in any of the following recreational activities on your farm or ranch? (Check yes or no for each activity)

	Yes	No
vacationing (guests)	_____	_____
camping (tents and trailers)	_____	_____
hunting, big game	_____	_____
hunting, ducks, geese, or upland game birds	_____	_____
fishing	_____	_____
swimming	_____	_____
snowmobiling	_____	_____
horseback riding	_____	_____
other (specify) _____	_____	_____

2. If you could make a profit, what would you think of obtaining additional income by charging fees for the following activities?

	Interested	Not interested
vacationing (guest farm or ranch)	_____	_____
camping (tents and trailers)	_____	_____
hunting (big game or birds)	_____	_____
horseback riding	_____	_____
snowmobiling	_____	_____

3. If you are interested, what is your main reason?

would be interesting to meet guests	_____
would be a needed source of income	_____
there is a need for more recreational facilities	_____
other _____	_____

4. If you are not interested, what is your main reason?

want to stick strictly to farming	_____
prefer privacy	_____
don't want to be bothered with management	_____
other _____	_____

5. Do you think that the working activities of your farm or ranch, and the animals on it would be interesting enough for people, especially those from the city to spend some time here and pay for it? Yes \_\_\_\_\_ No \_\_\_\_\_ Don't know \_\_\_\_\_

6. Would you like to be able to charge hunters for hunting on your land? \_\_\_\_\_



APPENDIX C  
THE CHI-SQUARE TEST



## THE CHI-SQUARE TEST

### Test for independence of two variables

The chi-square test can be used to test the hypothesis of independence of two variables. Observed frequencies are presented in a contingency table with R rows and C columns, the number of rows and columns depending on the number of classes into which each variable is divided. Row and column totals are called marginal frequencies.

The chi-square value is obtained by finding the expected frequency for each cell and comparing this value with the observed frequency.

The formula for obtaining the expected frequency of any cell is given by (Walpole, 1968:256) :

$$e = \frac{RC}{T} ,$$

where R and C are the corresponding row and column totals and T is the grand total of all observed frequencies.

The calculation of the chi-square value is given by the formula (Walpole, 1968:258) :

$$\chi^2 = \frac{(O-E)^2}{E} ,$$

where O and E are observed and expected frequencies respectively.



If the computed chi-square value is larger than the critical value for the chosen significance level and the appropriate number of degrees of freedom, the null hypothesis of independence of the two variables is rejected at that significance level, and an association between the two variables exists. The number of degrees of freedom is

$$\text{d.f.} = (R-1) (C-1).$$

Siegel (1956:178) recommends that in a RxC contingency table fewer than 20 per cent of the cells should have expected frequencies of less than five and no cell should have an expected frequency of less than one.

In this study it was often necessary to combine classes to fulfill this recommendation.

#### Goodness of fit test

A similar procedure can be used to test the hypothesis that a sampled characteristic has the same distribution as in the population from which the sample was drawn. Expected frequencies are calculated by multiplying the percentage relative frequency of each class in the population by the total number of observed frequencies for the sample. The calculation of a chi-square value then proceeds according to the method outlined above.

For a further discussion of the chi-square test see Walpole (1968:252-259).



APPENDIX D  
TEST FOR DIFFERENCE OF PROPORTIONS



## TEST FOR DIFFERENCE OF PROPORTIONS

This procedure is used in testing the hypothesis that two proportions taken from two independent random samples are not significantly different. The appropriate test statistic is Walpole (1968:246):

$$z = \frac{\hat{p}_1 - \hat{p}_2}{\hat{p}(1-\hat{p})[1/n_1 + (1/n_2)]},$$

where  $\hat{p}_1$  and  $\hat{p}_2$  are the proportion of successes for the two samples and  $n_1$  and  $n_2$  are the sizes of the two samples. The value  $p$  is equal to  $(x_1+x_2)/(n_1+n_2)$  where  $x_1$  and  $x_2$  are the number of successes for the sample of sizes  $n_1$  and  $n_2$ .

If the computed  $z$  value is lower than the critical value for the chosen confidence level, the hypothesis of no significant difference between the proportions is accepted.

For a further discussion of this test see Walpole (1968:244-248).



APPENDIX E  
CALCULATION OF CONFIDENCE INTERVALS









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